

# The ARCHITECTURAL FORUM

VOLUME XXXVIII

FEBRUARY 1923

NUMBER 2

## High Buildings and Beauty

### PART I

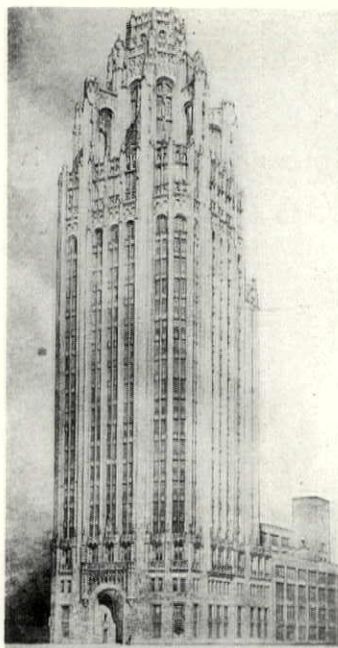
By IRVING K. POND, F.A.I.A.

SOME little time ago I discussed in these pages the matter of high buildings as affected by zoning laws,\* and while I bore upon design it was upon the general idea rather than upon the ideal—that is upon an *ideal of beauty* which might find expression in a particular structure conditioned by limitations of environment, height and setbacks. In mere suggestions of sketches I showed how the problem of supplying light and air to streets and lower stories had been met and after a manner solved in other ages and countries, and I indicated the path of departure along the line of the American idea. I suggested that offsets as now required under a zoning law contained within themselves æsthetic possibilities in design and freshness of architectural style as well as

ameliorating conditions of daylight eclipse and of insanitation. I was asked by the Editor of THE ARCHITECTURAL FORUM to follow up that discussion with one bearing directly upon the æsthetic element, and I consented with some hesitation to do so.

Conditions interposed which delayed the fulfillment of my promise, and now a circumstance has intervened which would seem to make a complete fulfillment unnecessary—at least which would seem to suggest a shifting of my point of attack; and that circumstance is the consummation of a competition for an office building to house the activities of a

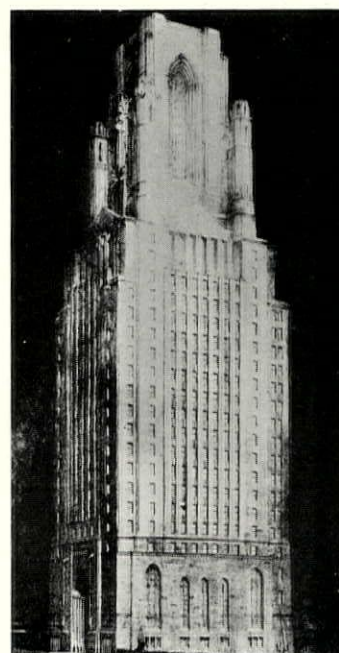
great newspaper corporation. As the competition was fairly widely advertised, I violate no confidences in saying that it was instituted by *The Chicago Tribune*, which has sought for



First Prize Design  
John Mead Howells and Raymond M. Hood  
Associate Architects



Second Prize Design  
Eliel Saarinen  
Architect



Third Prize Design  
Holabird & Roche  
Architects

\*October, 1921





Invited Design  
James Gamble Rogers, Architect

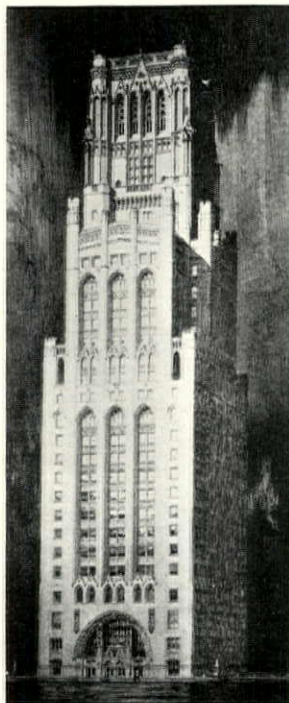
its conclusion, *The Tribune* continually published cuts of buildings of acknowledged high quality of design, ranging from two-storied palaces in the Italian renaissance through oriental tombs and domed mosques and Christian churches, through modern imitative collegiate buildings to the richest ecclesiastical and communal expression of the middle ages. Accompanying each presentation was the question: "Is this to be the type of architecture embodied in *The Tribune's* new home?" No hint from *The Tribune* was ignored by the competitors, and some feature from each type of building presented appeared in the final drawings. But the thing which touches my æsthetic sense most deeply is the irresistible conclusion reached by every competing architect,—that *height* is an absolutely necessary concomitant of beauty, at least in an office building; and the intense mental and emotional strain which went into the preparation of these designs focused itself in great measure on how to effect a transition from the 260-foot base devoted to use to the 140- to 250-foot superstructure so essential to beauty!

There was, evidently, unanimity of opinion that *The Tribune* could not be in-

terpreted in terms of use or service, no matter how spiritually that service might be rendered or expressed, without some superimposed feature,—often the merest claptrap and fol-de-rol,—to catch the public fancy. Many designs—without symbolism, let us hope, and without any intent toward interpretation—were claptrap from the base courses to the pinnacles—mere applications of frippery. Only into one design, that placed second by the jury (but placed first by over 90 per cent of the public, lay and professional, who saw the drawings), did the element of exalted spirituality enter, and it did enter and permeate this, the only well-nigh structurally pure and thoroughly logical solution of the problem of the lofty steel-framed structure. This design was presented by Saarinen, of Helsingfors, Finland, who, perhaps because of his remoteness from contaminating influences, and perhaps because of his own fine intuitions, was able to see the problem clearly and see it whole. Excepting as to the low, simple first story, Saarinen's forms are steel forms clothed in stone, and not, like those of the design



Honorable Mention  
Andrew N. Rebori  
Architect



Honorable Mention  
Richard E. Schmidt, Garden  
& Martin, Architects



Honorable Mention  
D. H. Burnham & Co., Architects

placed first by the jury, stone or masonry forms stayed and stiffened to their task by steel; nor like those of the design unaccountably placed third, whose monumentally massive, crypt-like chapel of masonry crushes the hybrid substructure of masonry and steel. There were one or two designs which recognized the steel structure and covered it logically, but none in subtlety or refinement came within hailing distance of the design from Finland.

It will be interesting to study the designs submitted in this competition, both from the standpoint of the results achieved and from that of the attitude of





Honorable Mention  
Lucian E. Smith, Architect

masonry in conjunction with a sub-dominant vertical treatment of the steel structure, to other and intermediate steps in which the conditions of treatment are reversed; ranging through a laminated treatment showing, as in the design placed third, massive masonry superimposed upon steel-stayed masonry much lighter in character, this in turn superimposed upon a firm masonry base. Again, the designs range all the way from those one would expect to find emanating from the brain of a confectioner, through those from one in whom the structural sense is undeveloped, though perhaps present, to those from others to whom structure is basic in architecture, and must be recognized, if not in a pure, then in a pseudo, expression. And again, lying deeper than all this, is the element of spirituality. This element has, to my mind, received a manifest embodiment in but one of the designs submitted (that placed second). Many have sought to achieve an expression of spirituality by the introduction of ecclesiastical forms and masses, but in all cases have signally failed. Placing the semblance of a chapel or of a church tower upon a commercial building, or upon

the various architects toward the problem. First, the designs range all the way from the logical presentation by Saarinen to the distressing nondescript whose author is and shall be nameless. They range from a treatment expressive of the steel framework, which is an absolute necessity to the structural integrity of every design presented, to a masonry treatment denying the presence of the steel; ranging through the intermediate steps, which as in the design placed first, include a dominant vertical expression of

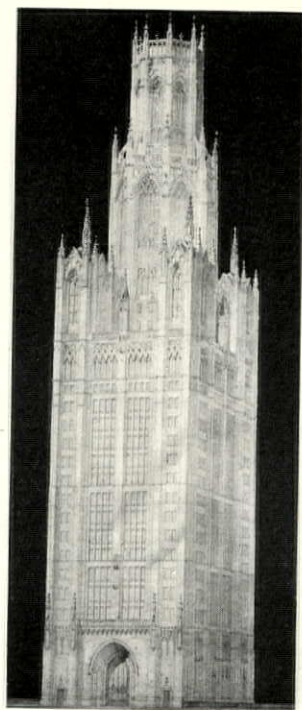
any other type of structure for that matter, will not necessarily imbue that structure with an essence of spirituality, though that seems to have been the end sought by so many of the designers in this competition.

The introduction of numberless pinnacles and flying buttresses in steel and terra cotta does not produce an illusion of spirituality, though so many sought, by such puerile and ineffectual means, to accomplish it. The introduction of a pointed arch does not insure a spiritual presence, Spirituality, that rare compound of grace and charm and mystery, is not achieved by setting up a mediæval cathedral tower upon a modern thoroughfare and grouping about it, seemingly, a cluster of vertically elongated chapels. Although by this treatment the ecclesiasticism generally associated with the forms has been made to vanish—has been made to go out through the office windows, as it were—the structure has not necessarily become the abode of that spiritual quality without which architecture is naught.

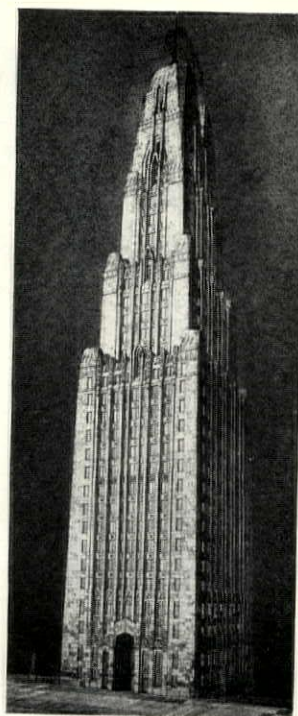
Seemingly the designers who commandeered the renaissance forms did not seek to enshrine the spirit, if, indeed, any of the others who referred their draftsmen so assiduously to the plates and files and photograph cabinets did so seek. Only one in all the multitude of competitors seems to have come to the task clear eyed; and he, seeing the forms which would fit, himself put them on paper, himself made them visible to others, himself by a sincere attitude toward the problem induced the spirit to hover over his pen and finally to enter into his design. One or two others—all Americans—had, perhaps, a similar vision, but in them it cannot have been so clear.



Invited Design  
Bertram G. Goodhue, Architect



Honorable Mention  
Guy Lowell  
Architect



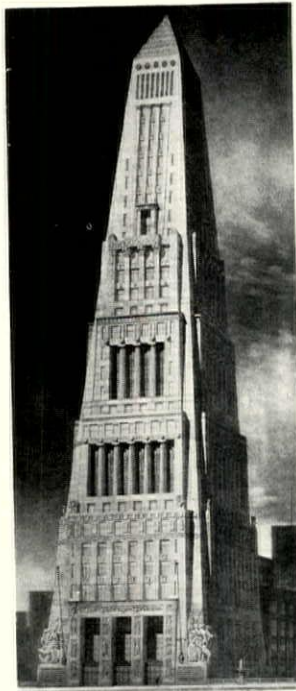
Honorable Mention  
Arthur Frederick Adams  
Architect

The really disheart-



ening aspect of this collection of designs is that, outside of the work of a small half-dozen, it seems to demonstrate so palpably the absence of a fine idealism among the architects of the 22 nations represented in the competition. No limitations were imposed excepting that beauty was to be achieved; and, with the few exceptions noted, those who rose above the commonplace contented themselves with performing stunts of draftsmanship and design; with placing unrelated mortuary chapels, crypts, cathedral spires, and "Boston stumps" upon under-developed office buildings! Why was the spirit of beauty so evasive all the while? Why did she content herself with merely flitting across the sheets of drawings and refusing to enter into the structures? Is it because while draftsmen have learned to draw, architects have not learned to build? One could almost guarantee to pick out from among the drawings those "rendered" by the designers themselves. Some—many—of the "renderings" were stunning bits of artistry and might almost have compelled an acceptance of the designs they bodied forth. Perhaps it were too much to say that that was the case with two of the premiated designs.

An interesting feature of the designs was the display of the national or racial limitations on the part of the designers. I shall take this up in another article when I analyze the various types of design pre-



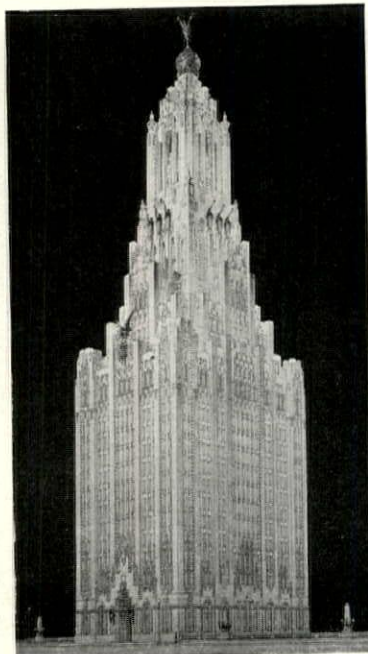
Alfred Fellheimer, Steward Wagner  
Associate Architects

sented and try to study the attitude of the architect in approaching his problem. I imagine the proposition would stagger me and that I would move, bewildered, toward it!—to have unlimited millions with which to produce transcendent beauty! And knowing my own probable reaction, I am not so much at a loss to comprehend why the expenditure of the \$400,000 or so, which it cost to produce these competition drawings, resulted in so few designs in which the spirit of beauty inhered.

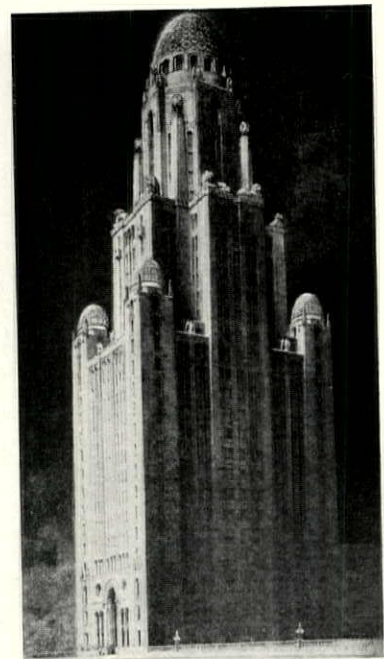
The results of the competition demonstrate, too, that the competing architects hold the setback, in some form or contrivance, as constituting an element in architectural beauty. This was not the case until quite recently; and then, as I made clear in my paper referred to at the beginning, the initiative was not taken by architects who had apprehended the æsthetic possibilities inhering in the scheme, though the experience of ages should have counted for something, but by altruists who sought to ameliorate untoward physical conditions. But the designs under consideration indicate that the scheme—as ministering to the possible achievement of the highest beauty—has been adopted by the profession generally, to be employed even in this case where no zoning laws nor legalized restrictions as to setbacks imposed purely physical limitations on the designer. Into this and other details I propose to enter more fully later.



Design Submitted by  
Louis Bourgeois, Francis E. Dunlap,  
Charles L. Morgan, Associate Architects



Design Submitted by  
Albert J. Rousseau  
Architect



Honorable Mention  
Alfred Morton Githens  
Architect



# Sir Christopher Wren, 1632-1723

By HAROLD DONALDSON EBERLEIN

ON the 25th of February, 1723, Sir Christopher Wren died at his home at Hampton Court, and was laid to rest a few days later in the crypt of St. Paul's. Most readers are familiar with the last lines of the epitaph inscribed on the simple stone that marks his tomb—"Lector, si momentum requiris, circumspice"—"Reader, if you seek his monument, look about you." The preceding lines of his epitaph, however, are less generally remembered. Done into English they read, "Beneath lieth Christopher Wren, the builder of this Church and City, who lived more than ninety years, not for himself, but for the public good." It is the aspect of his career thus summarized that chiefly comes to mind this month when the bi-centenary of the death of England's illustrious architect is being observed.

A man of the broadest culture and sympathies, of manifold activities and of marvelous industry, Sir Christopher Wren in his own day exercised an influence hitherto unparalleled in the sphere of England's architecture; today the direction his vigorous personality and convinced conceptions imparted to the current of architectural development is little, if any, less felt than while he was alive. In view of this enduring effect he produced upon the trend of that "art of well building" he so ardently practiced, it will not be amiss on this two-hundredth anniversary of his death to consider one phase of his work that is too often overlooked, eclipsed as it is by the fame of his better known achievements which challenge the eye in London, Oxford and Cambridge, and are familiar the world over through oft-published illustrations.

This well-nigh forgotten phase embraces the domestic work to which Wren now and again turned his hand during the course of an exceptionally crowded career that was mainly occupied by undertakings of a public or monumental sort. The building of St. Paul's, the rebuilding of the burned City churches, the creation of the Sheldonian

Theater, or of his varied collegiate and hospital work—any of these alone would have sufficed as a patent of brilliant fame and have established his unquestioned pre-eminence in the annals of British architecture for all time. The tale of his combined accomplishments is truly amazing. And to this astonishing list we must still add the domestic item. The instances are not numerous and, from force of circumstances, were only incidental to his more exacting responsibilities, but they bear the distinguished impress of his characteristic manner and richly deserve study. That he should have wrought so much and such divers work is all the more astonishing when we remember that he did not begin to practice architecture until he was about 30 years old and that, prior to that time, he seems not to have made it a special object of study.

Born October 20, 1632, at East Knoyle in Wiltshire, of which parish his father, the Reverend Christopher Wren, was rector, he was a delicate child and because of his tender health was not sent to school until after he had reached what for those days was considered the mature age of nine. When Wren was but four years old, his uncle, Bishop Matthew Wren, was translated from the see of Norwich to that of

Ely and thereupon resigned the deanery of Windsor and the registrarship of the Garter. These two important offices the king then conferred upon the Rector of East Knoyle, and thenceforth the young Christopher passed his time between the deanery at Windsor, East Knoyle, which living his father retained, and the rectory at Great Hasely in Oxfordshire, a benefice the Reverend Christopher Wren also held.

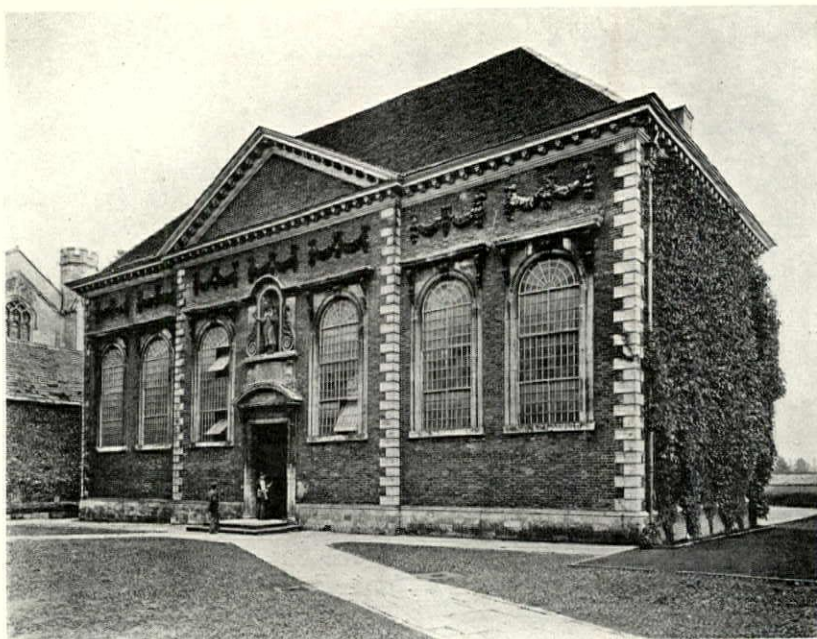
The little Christopher's first steps in classical learning were "committed to the care of a domestick tutor, the Reverend William Shephard." A child of unusual parts, sensitive and mentally precocious, he not only made rapid progress under his instructor but, we may be sure, acquired a very



The Guildhall, Rochester (1687)

Courtesy of Messrs. B. T. Batsford, Ltd.





*Courtesy of Messrs. B. T. Batsford, Ltd.*

Great Hall, Winchester School (1684)

lively interest in public affairs in the atmosphere of a household bound by the closest personal ties and sympathies to many of the principal actors in the events of that stormy period.

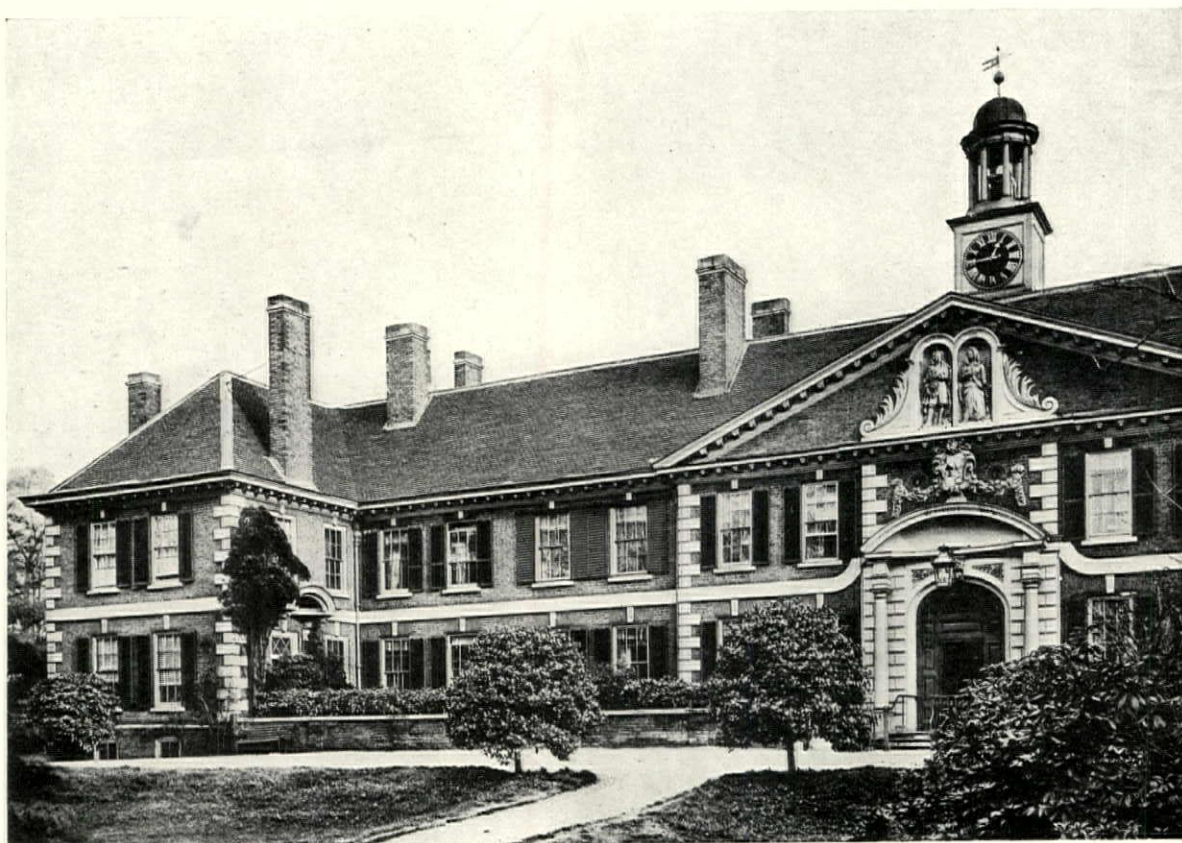
In the same year that Christopher began his school career under Dr. Busby, at Westminster School, civil war broke out. Doubtless he had his

share, along with the other Westminster boys, in aiding the choristers and vicars-choral in their successful defense of the abbey against the apprentices' attack in 1642. His Latin letters to his father testify not only to his fluent skill in that tongue but also to his loyal royalist sentiments and his loathing of the ways of those who were bringing such misfortunes upon his family and all the king's adherents.

In 1643 Susan Wren, Christopher's elder sister, had married the Reverend William Holder, sub-dean of the chapel royal, who was, according to Aubrey, "a handsome, gracefull person of delicate constitution," very helpful in the education of his young brother-in-law, Christopher, "a youth of prodigious inventive wit, of whom he was as

tender as if he had been his owne child." Mr. Holder it was who gave the boy his "first instruction in Geometrie and Arithmetique," and fostered that mathematical bent that was destined to bring distinction in later years.

Between Wren's leaving Westminster School and going to Oxford occurred an interval of three years,



*Courtesy of Messrs. B. T. Batsford, Ltd.*

Entrance Front, Morden College, Blackheath (1695)  
Sir Christopher Wren, Architect



a part of which time, at least, he spent in London as a pupil and assistant to Sir Charles Scarborough, one of the foremost mathematicians and physicians of his day. Here Wren was ever busy with dissections, mathematical studies, and the contrivance of sundry ingenious mechanical inventions. He also found time to translate into Latin Dr. Oughtred's tract on geometrical dialing. Doubtless the added impetus to scientific investigation derived from association with Scarborough, and the opportunities of frequent intercourse with men of distinguished attainments did much to open the way for the part Wren was later to play in founding the Royal Society and winning renown as one of the greatest mathematicians of his age.

In 1649-1650 Wren was entered as gentleman-commoner at Wadham College, Oxford. In due course of time he was made fellow of All Souls'. In July, 1654, Evelyn, then on a visit to Oxford, records in his diary that he "visited that miracle of a youth Mr. Christopher Wren, nephew of the Bishop of Ely," and from this time dates the beginning of

that intimate friendship that was to prove momentous not only to Wren's fortunes but to the future of England's architecture. In 1657 Wren became professor of astronomy at Gresham College, London, a post he resigned in 1661 for the Savillian chair of astronomy at Oxford.

1662 was the turning point of Wren's career.



*Courtesy of Messrs. B. T. Batsford, Ltd.*

"Dodo House," Chichester (1684)



*Courtesy of Messrs. B. T. Batsford, Ltd.*

House in West Street, Chichester (1684)

Sir Christopher Wren, Architect





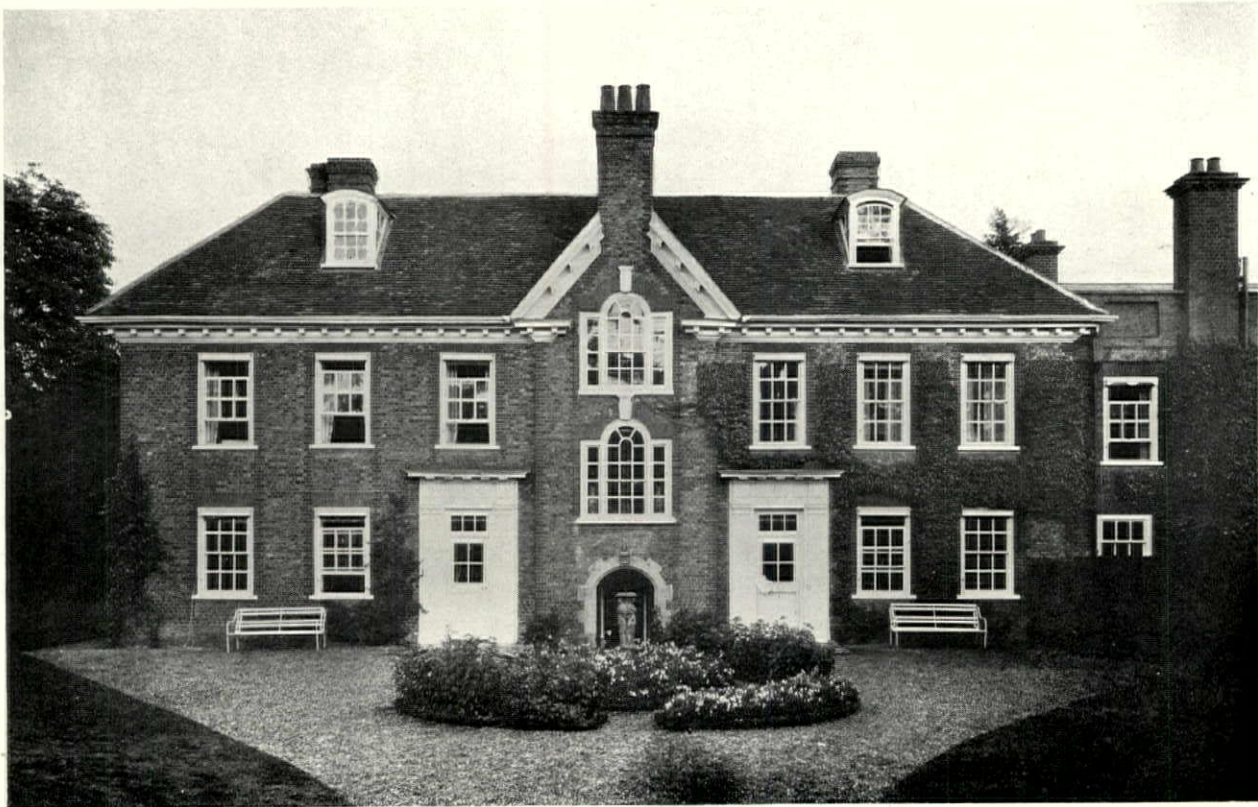
Hall and Staircase, Aspley House, Bedfordshire

Charles II, determined to enlist the services of so able a person, created for him the office of assistant to the surveyor-general, with succession to the full surveyorship upon the retirement or death of Sir

John Denham, who had succeeded Inigo Jones in that post. Thus "Christopher Wren, Doctor in Medicine, Saville Professor of Astronomy in our University of Oxford," as he is described in the charter of the Royal Society, by royal warrant was set in the very forefront of the architectural profession. Evelyn's influence and advice, it would appear, were in large measure to account for the king's decision to place in so responsible a position one hitherto wholly unknown as an architect. How amply the event justified Evelyn's confidence and the king's decision, we all know. The story of Wren's subsequent architectural and personal career is admirably told in Miss Milman's "Life," wherein the reader will find a wealth of illuminating detail. We shall leave him, therefore, to peruse that story for himself while we pass on to a brief review of Wren's domestic architecture.

In only a very few instances is there *documentary* evidence to attest beyond all question Wren's authorship of houses; in a few other instances attribution rests upon long standing tradition which, all things taken into account, including internal evidence, appears plausible enough to accept in lieu of more explicit written testimony. Even then, all told, the list is short for reasons already mentioned. Any one of the houses in question would furnish material for an extended analysis, so we must perforce content ourselves at this time with a general consideration of the qualities they display.

Coventry Patmore's dictum that "Sir Christopher



Garden Front, Aspley House, Aspley Guise, Bedfordshire, circa 1695

Sir Christopher Wren, Architect



Wren could not build a common brick house without imposing his own character upon it" applies not only to everything Wren did, but in a very special way puts the gist of the whole matter into a nutshell with reference to the few houses he did design. Had Wren had the leisure to design more dwellings, doubtless every one would have borne witness to the truth of which he was so sincerely convinced—that designing in the classic manner, no matter what the subject, need never be dull nor perfunctory though conforming to all the restraints by which classic composition is hedged round about. For Wren's fertile brain, the very existence of limitations stimulated a fruitful and active invention. Imbued as he was with a love of order, balance, spacious symmetry, and common sense combined with elegant dignity, he never allowed himself to be carried away by fallacious enthusiasms nor to be beguiled by picturesque whimsicalities and mannerisms. In fact, the "picturesque" in architecture made no appeal to him. But his insistence upon a disciplined classic expression in all his work did not prevent his natural geniality from manifesting itself in divers and always interesting ways. His temperament, if restrained and carefully ordered, was also vigorously human and instinct with wholesome joy in urbanity and graceful forms, and this side of his character also showed itself abundantly in all his creations.

Wren thought for himself. Just how far he was affected by Vingboon's book and the Dutch influence, or just how much he owed to his visit to France and a short acquaintance with Bernini, who



Detail of Aspley House  
Rubbed brick lintels and arches and red brick flush quoins  
relieving dark bluish gray wall

was in Paris at the same time, it would be difficult to say. Nor does it matter. Whatever Wren absorbed from other sources he so thoroughly digested that whatever he gave forth was unmistakably moulded



Entrance Front, Aspley House, Aspley Guise, Bedfordshire  
Sir Christopher Wren, Architect



by his own sturdy originality. As it was his aim to build for all time, so on principle he eschewed all features of ephemeral appeal. He was never afraid of being dull, if restraint and repose should chance to bring that charge. But he never *was* dull.

In accepting the discipline of classicism he had exactly the same "properties" to work with as all others working in the same mode, and he could have been dull and pedantic if it had been in him. On the contrary, in a perfectly legitimate manner he invested his houses no less than his larger edifices with the charm of coupled suavity and vigor, so contrived the balance and interest of his compositions, so disposed the play of light and shadow, and made such adroit use of color and material, that the ensuing distinction proclaims the hand of a master. To mention only a few instances, Winslow Hall, "Dodo

House," and the house in West street in Chichester witness the variety in composition his imagination could always be trusted to compass, while in Apsley House may be seen an engaging management of color and material.

These qualities endowed Wren's work with a permanent value which, if not always so quickly apprehended by an untrained eye as more sensational manifestations, never fails ultimately to carry satisfying conviction. No better tribute to this quiet staying force of Wren's genius can be quoted than what Carlyle once said of Chelsea Hospital—"I had passed it almost daily for many years without thinking much about it, and one day I began to reflect that it had always been a pleasure to me to see it, and I looked at it more attentively and saw that it was quiet and dignified, the work of a *gentleman*."

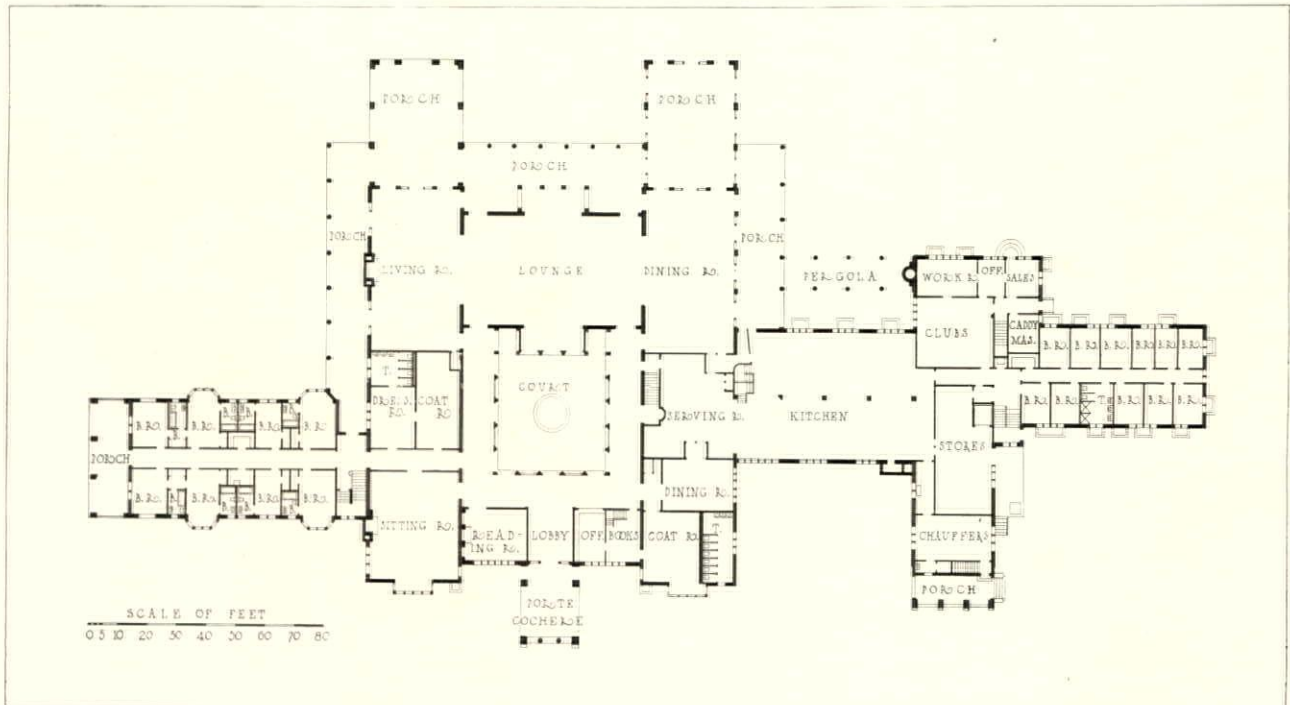


Garden Front, Winslow Hall, Winslow, Bucks, *circa* 1700  
Sashes and glazing have been modernized and have altered the aspect. The general lines of the composition, however, are characteristic  
Sir Christopher Wren, Architect





VIEW OF SIDE TOWARD LINKS



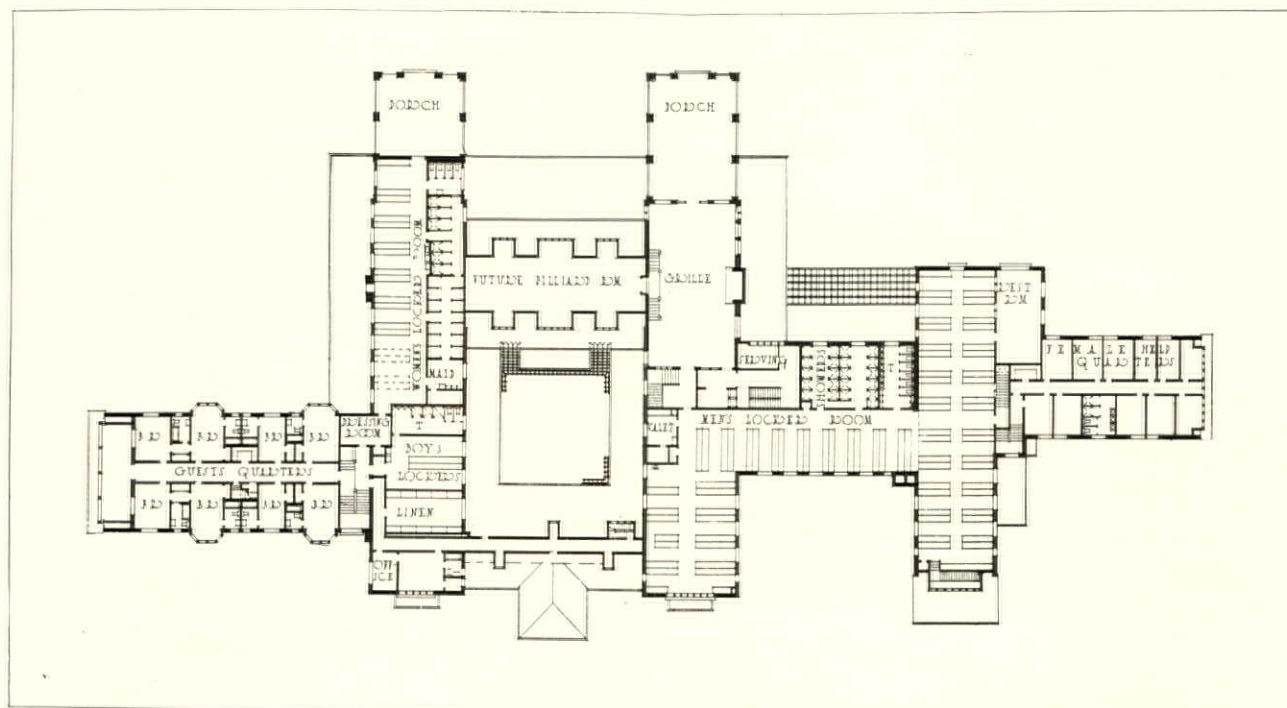
Photos by John Wallace Gillies

FIRST FLOOR PLAN  
DETROIT GOLF CLUB, DETROIT  
ALBERT KAHN, ARCHITECT





LINKS FACADE LOOKING TOWARD SERVICE WING



SECOND FLOOR PLAN

DETROIT GOLF CLUB, DETROIT

ALBERT KAHN, ARCHITECT





DETAIL OF PORCHES



GRILL ROOM ON SECOND FLOOR

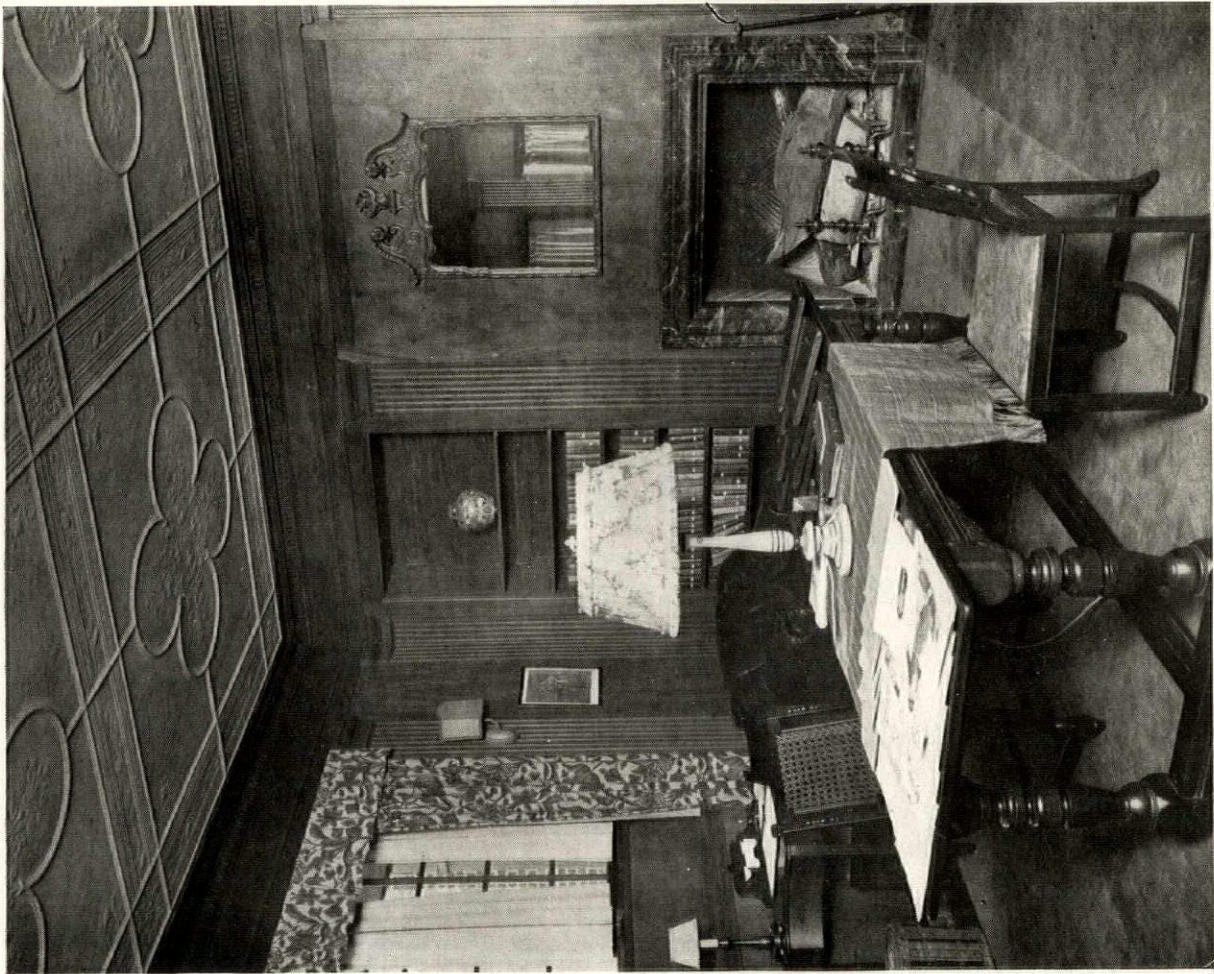
DETROIT GOLF CLUB, DETROIT

ALBERT KAHN, ARCHITECT





COURT CORRIDOR



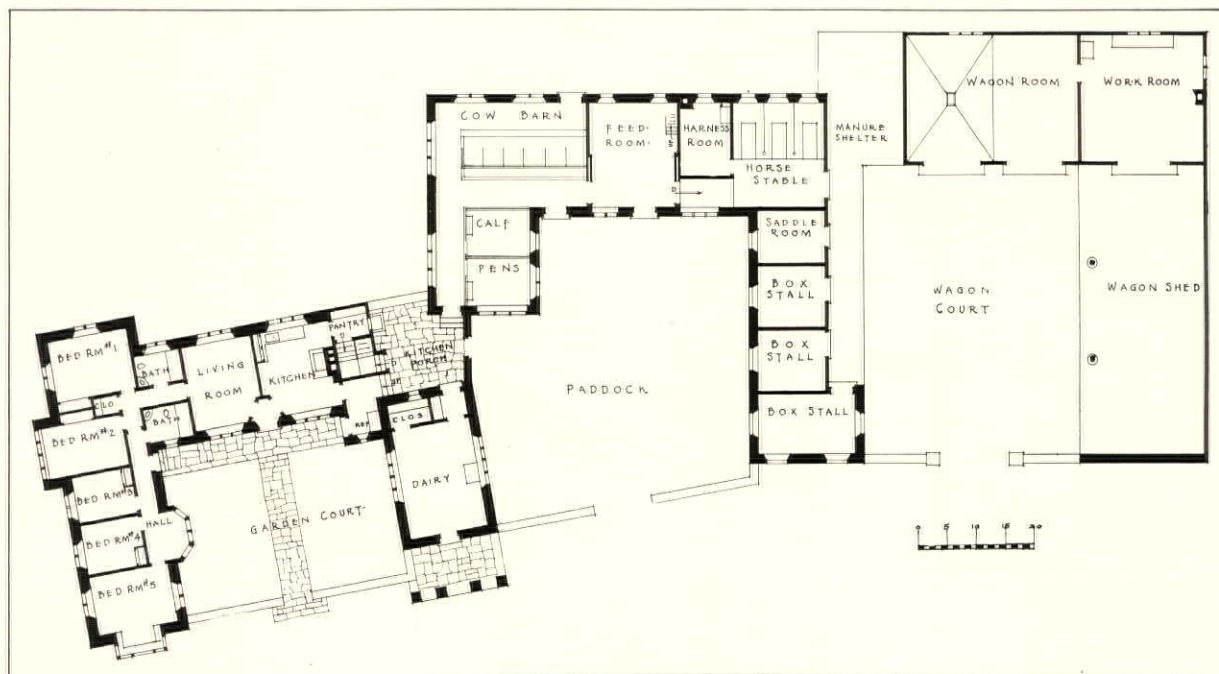
READING ROOM

DETROIT GOLF CLUB, DETROIT  
ALBERT KAHN, ARCHITECT





GENERAL VIEW OF ENTRANCE FRONT



*Photos by Tebb's Architectural Photographic Co.*

FIRST FLOOR PLAN

FARM BUILDINGS OF WALTER DOUGLAS, ESQ., DOBBS FERRY, N. Y.  
ALFRED HOPKINS, ARCHITECT





GENERAL VIEW FROM SUPERINTENDENT'S COTTAGE

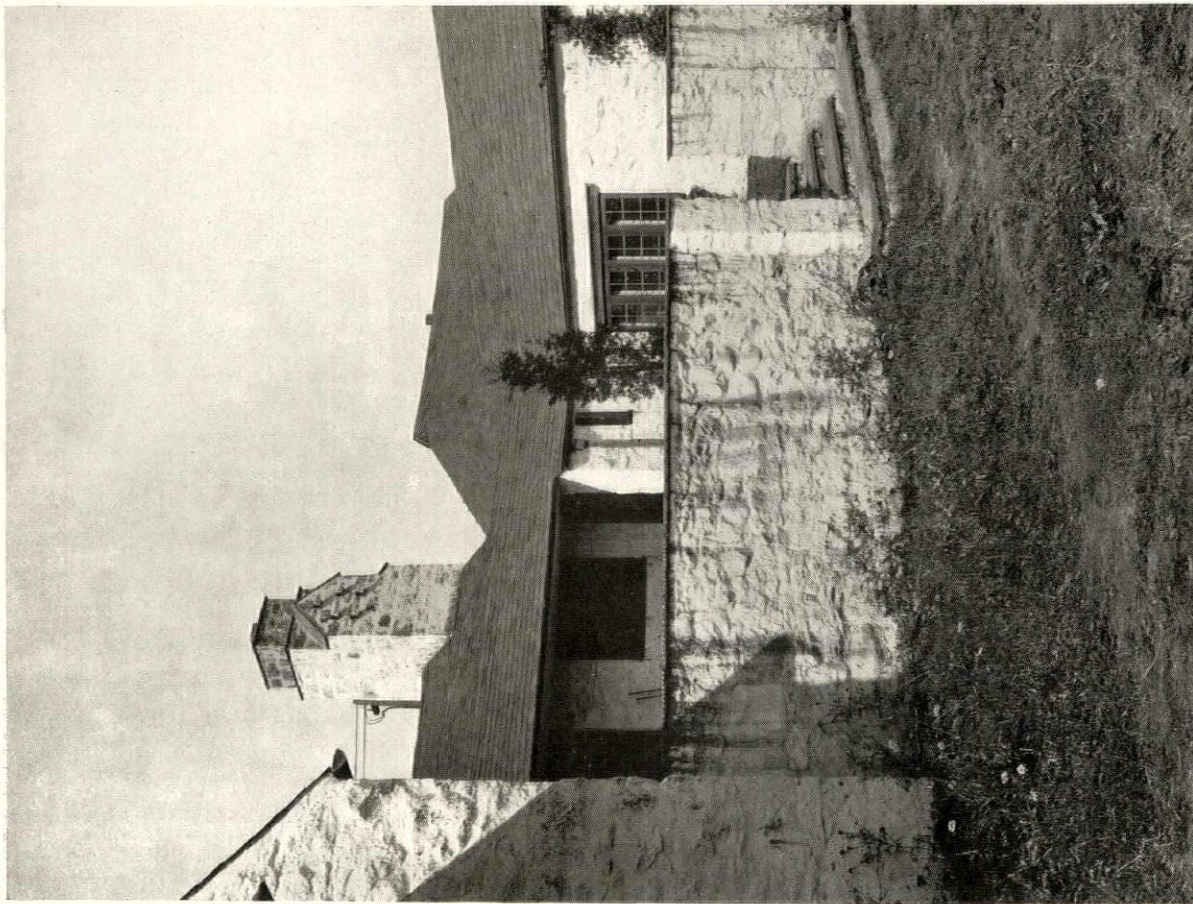


VIEW LOOKING INTO WAGON COURT

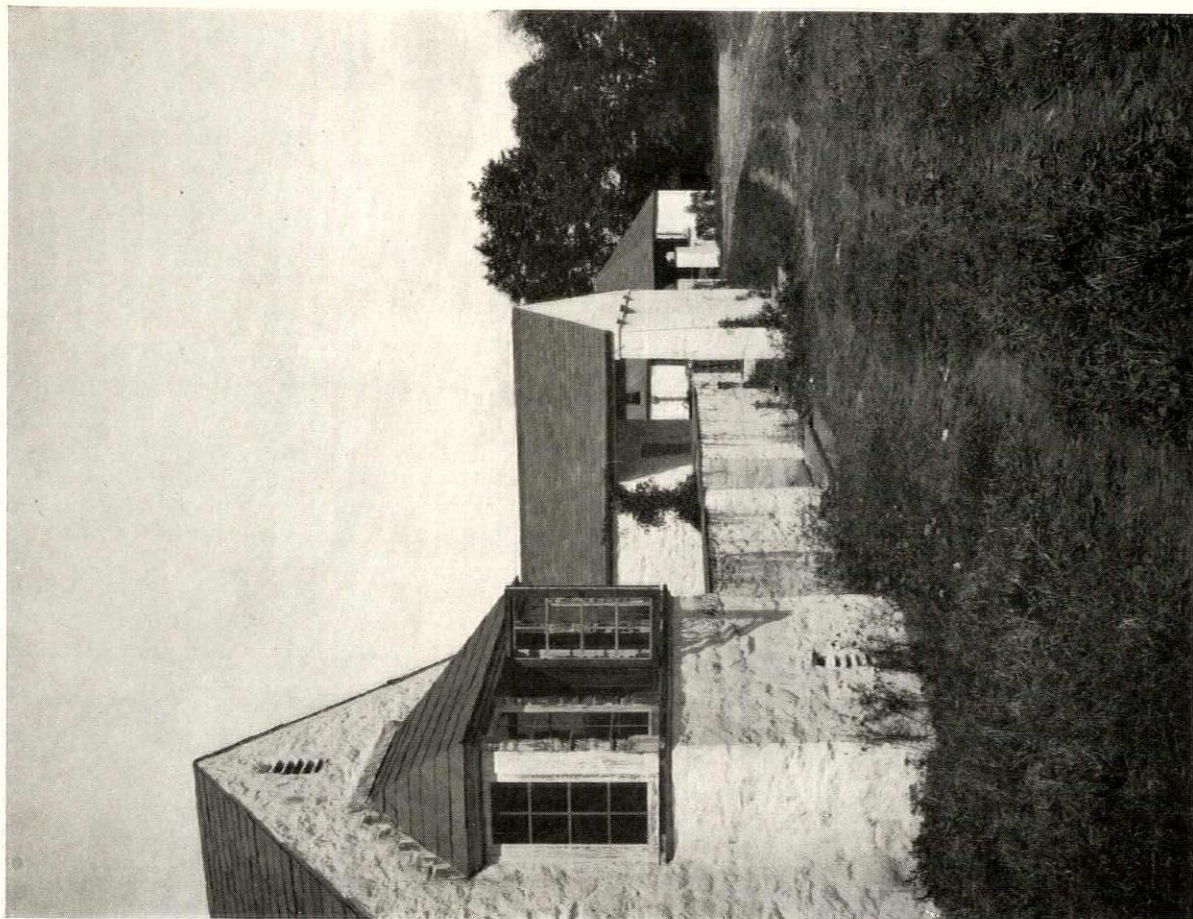
FARM BUILDINGS OF WALTER DOUGLAS, ESQ., DOBBS FERRY, N. Y.

ALFRED HOPKINS, ARCHITECT





DETAIL FROM COURT OF COTTAGE



DETAIL OF SUPERINTENDENT'S COTTAGE

FARM BUILDINGS OF WALTER DOUGLAS, ESQ., DOBBS FERRY, N. Y.

ALFRED HOPKINS, ARCHITECT





GENERAL VIEW INTO SERVICE YARD



*Photos by Henry Fuermann & Sons*

DETAIL OF ENTRANCE AND GARAGE

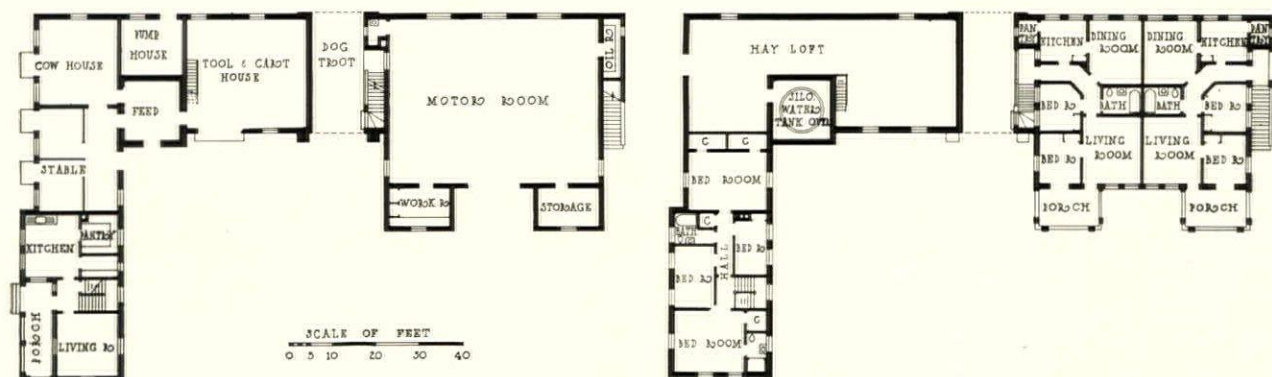
SERVICE BUILDING, ESTATE OF WILLIAM V. KELLEY, ESQ., LAKE FOREST, ILL.

HOWARD SHAW, ARCHITECT





DETAIL OF COURT SIDE AND SILO TOWER



SERVICE BUILDING, ESTATE OF WILLIAM V. KELLEY, ESQ., LAKE FOREST, ILL.

HOWARD SHAW, ARCHITECT



# BUSINESS & FINANCE

C. Stanley Taylor, *Editor*

## Business Factors in Architectural Practice

### I. MORTGAGE FINANCING FOR MODERATE-COST DWELLINGS

A STUDY of the developments of the past few years within the architectural profession indicates a record of progress which should be a source of pride to every practicing architect or friend of architecture in the country.

Perhaps one of the most gratifying indications of the broadening scope of architectural service may be found in the architect's growing recognition of his own importance in the economic scale. Certainly the public shows evident indications of an increasingly favorable comprehension of this position which is due not alone to artistic skill and the advancement of structural knowledge demonstrated under the architects' control of thousands of new building projects which are being developed annually. This strengthened position of the profession may be attributed in a large measure to the growth of a broader interest on the part of the architect in assisting his client toward the solution of business problems arising in connection with individual building projects. These problems may be of a financial nature, including a careful analysis of investment features, or as in the case of industrial buildings, automotive buildings, stores and similar structural types, a study of the business to be carried on within the building which is absolutely necessary if the structure is to be developed as an efficient machine for its purpose.

Today it will be found that the average successful architect is a good business man with a fundamental knowledge of business practice and of economics. He is in a position to interpret the problems of his clients not only in terms of line and proportion but in terms of structural efficiency and of dollars and cents. There are those who would belittle this important phase of architectural service—who fear that the architect is departing from his true function when he spends time away from the drafting board in order to talk to bankers on behalf of the interests of his client. There are also many who without denying that this is an age of specialization decry the development of specialized practice on the part of an architect.

The fact is that in the average successful architectural office today we find a thorough appreciation of the need for trained business minds in order that the

THIS is the first of a series of practical discussions of business subjects interrelated with various phases of present-day architectural practice. The series will cover the more important business problems which may be involved in the contact of the architect with his clients and in the administration of his own office. Consideration will also be given the logical relations between the architect and other professional men whose services are required in a consulting capacity in connection with the development of building projects.—*Editor*

influence of the architect and his advice and service may apply to a building project from its embryonic stages. We find also in certain offices that a vast fund of specialized knowledge

has been built up around special building types such as theaters, hospitals, schools and other general classes. The result of this condition is the establishment by the architect of an almost autocratic control of the building plans, materials and equipment. The service which it is possible for such architectural offices to render is highly gratifying to the client (although not always fully appreciated until a later period) and contributes strongly to establishing the architectural profession in a better position before the eyes of the building public. The reverse of this condition is also true. There are many architects who are excellent designers and who may be possessed of valuable knowledge in regard to the actual construction of buildings, but many of these are finding that because of their inability to appreciate the business problems of the client, commissions which might otherwise have been theirs are unrealized. Often such proposed work goes ultimately to another office where a broader type of service to the client has been made possible through a more businesslike appreciation of the problems involved in building requirements.

In present-day architectural practice it is very difficult indeed to draw a line at the point where business knowledge may overshadow artistic appreciation. It is not at all difficult to point out many instances where practicability and fine architecture have clashed, to the detriment of both elements. In the light of practical experience, and avoiding further reference to the fundamental controversy between art and business, it is quite certain that the more an architect may know about general business practice in relation to any building project, the more satisfactory his services will prove to the client. With these facts in mind, the present series of articles covering business factors in architectural practice is presented. We shall endeavor to provide information for reference purposes which will be of assistance to the architect at a time when he may be confronted by a business problem or one involving the employment of outside professional service.



The present article, which is the first of this series, relates to the mortgage financing of moderate-cost dwellings, a subject which should be of interest to many architects in view of the large number of such building operations projected for 1923. This article will be followed by a supplementary article on the mortgage financing of apartment buildings and hotels, also a subject of considerable interest.

**A**N interesting survey was recently made by the Research Department of THE FORUM covering the offices of a number of architects to determine the extent of moderate-cost dwelling construction under planning for the year beginning with the spring building season of 1923. It was found that in many of these offices plans had been prepared months ago for prospective house owners, but that actual construction had been held up because of the inability to finance.

Often this condition had been due to the fact that a client had underestimated the cost of the dwelling and was not prepared at the time to finance even the required equity. In many other instances it had seemed difficult to get mortgage money, and a careful examination of a few cases soon demonstrated that a substantial proportion of these projects might have been financed if all available channels for obtaining mortgage loans on this class of property had been tried.

Possibly it does not lie within the functions of the architect to act as a financial adviser to his client, but unquestionably many architects have greatly enlarged their own practices by a study of the mortgage market and by rendering direct assistance to enable the client to place himself in a financial position to begin construction. The architect is placed logically in a position to render a twofold service to a prospective home owner, entirely aside from that of architectural design and supervision; first, he may prepare plans and specifications in proper form for presentation in connection with a building and permanent mortgage loan application, and, second, by familiarizing himself with the mortgage market he may often be in a position to assist the client in arranging such loans.

There is, of course, a tendency on the part of the prospective builder of a moderate-cost dwelling to take advantage of available stock plans and the obvious service of building contractors, who in many instances advise against the employment of an architect; it will be noted, however, that the architect who has really developed a broader form of service to clients in this field is almost constantly busy. He not only assists in financing but often passes judgment on the selection of land; he strives to eliminate waste in construction cost and to direct the purchasing of materials and equipment in a manner which provides economy without too great a sacrifice of quality. In rendering a service of this nature, together with close supervision of the work of contractors, he justifies a commission sufficiently large to represent a profit to himself.

In the mortgage financing of moderate-cost dwellings the primary consideration is that of the first mortgage which will normally include the provision of a building loan payable at agreed stages of progress in the construction of the building. After the building is completed the final payment is made, and the mortgage is established on a permanent basis either for a definite period of years, at which time the entire principal becomes due, or in amortization form such as that of the average building and loan association, in which case the client pays a monthly amount covering interest and reduction of principal. We have therefore for consideration these two types of mortgages—the permanent or first mortgage and the amortization mortgage.

In providing the ordinary form of first mortgage it is usual to loan from 50 to 60 per cent of the appraised value of the land and building. This loan is for a period of 3 or 5 years, bearing interest at 5 or 6 per cent per annum and payable in full at the end of the period. If the mortgage is obtained from a bank or a well established loaning institution it is not usually called in at the expiration of the period, but a renewal is granted unless conditions require a reduction in the amount, or full payment. In applying for a first mortgage loan it is necessary that the land on which the house is to be built shall be free and clear of mortgages or liens of any nature. Often in purchasing land for home building an agreement is made with the seller of the land to take back part of the price in the form of a second mortgage on the completed house and land. In any event, the way must be left clear for the first mortgage loan to be established as a prior lien or claim for the protection of the mortgagee. The usual sources from which such mortgage loans are obtained are classified in these descriptive paragraphs:

1. *Savings Banks*, which are not allowed by law to loan more than 60 per cent of the valuation of the property. The savings bank is an excellent institution from which to obtain a loan, as the cost of arranging it is very low, usually not exceeding one-half of 1 per cent, and the mortgage can usually run undisturbed for many years, since the savings bank policy is one of renewal.

2. *Title Insurance or Trust Companies*, in districts where such organizations operate, are usually good institutions from which to obtain loans for home building. Experience shows that title companies will usually appraise property at slightly higher valuations than will savings banks, and consequently will at times make more liberal loans. The usual policy of the title company is to make a loan at 5 per cent, and the aggregate loaning activity is financed by selling these mortgages on a guaranteed income basis of  $4\frac{1}{2}$  per cent to the average investor, thus refinancing the company's activities. A mortgage loan from a title or trust company is usually certain to remain undisturbed for many years.

3. *Insurance Companies*, particularly fire and life insurance, usually have large reserve funds which are available for mortgage loans under banking



supervision. The procedure in the case of obtaining a loan from such a company is similar to that of securing a loan from a savings bank, title or trust company.

4. *Attorneys.* Perhaps the most general source of obtaining loans for modest building operations is through attorneys. Usually this is done directly through the attorney for the owner who may have handled his land purchasing operations. Such attorneys have from time to time sums of money placed with them for safe investment, particularly funds of estates or funds placed in trust by individuals.

5. *Private Funds.* Building and permanent mortgages are often obtained directly from private sources through personal or business acquaintances who may have money for conservative investment. In such cases the services of an attorney are usually depended upon for completing arrangements.

6. *Mortgage Brokers.* In metropolitan districts the services of mortgage brokers are very often called upon for securing loans on dwellings. Many real estate men also act as mortgage brokers. Their usual system is to keep in touch with various sources of money available for loans of this type. Immediately upon receiving application from the owner, the broker will go into the market to "place" the mortgage, and for his services is paid a commission, usually varying from 1 to 2 per cent. In placing the average mortgage there is a percentage charged to cover cost of the operation which may include cost of filing and recording, attorney's fee, broker's commission and other costs which may be incurred. When placing the mortgage through a broker the client is usually told that it will cost him 2 or 2½ per cent. This means that from the principal of the mortgage paid to the client or owner the indicated percentage will be deducted, out of which various expenses and broker's commission are met.

It is evident that in placing a conservative mortgage on a dwelling there are so many sources which are directly available to the house owner that it is not a wise proceeding to enlist the services of a mortgage broker unless the owner is willing to pay the necessary fees to have this work done for him. It is bad policy to interest more than one broker in obtaining a mortgage loan at one time. A better method is to give a broker what is known as "an exclusive authorization" to obtain the loan; otherwise, if more than one broker is visiting various mortgage sources, the owner's application becomes somewhat discredited.

Another plan of financing a building operation is known as the first and second mortgage method and is customary when the owner has not enough money to finance more than from 20 to 30 per cent of the entire cost of land and building. The first mortgage, up to approximately 60 per cent, is placed in the usual manner. If the owner had originally 25 per cent of the amount of money necessary to carry out the operation, it is evident that someone must finance the difference between the cost of house and land and the total of the first mortgage of 60 per

cent plus the amount of money which the owner had originally, a difference of 15 per cent. This is not an unusual condition, and there are several means of obtaining the necessary second mortgage money.

It is evident, however, that the second mortgage money is to be more expensive than that obtained on first mortgage loan. The second mortgage usually bears the brunt of any misfortune which may happen to the property. In case taxes or interest are not paid and it becomes necessary for either mortgagee to foreclose, the second mortgagee must be in a position to pay off the first mortgage and protect his own interest; otherwise, under foreclosure proceedings, his investment is in danger of being wiped out. In view of the greater risk, a second mortgage usually carries not only 6 per cent interest but requires the payment of a substantial bonus to induce the lender to take the risk involved. Here are some of the methods of financing the second mortgage:

1. In many cases the builder is willing to take a second mortgage as payment for his services. In this manner he receives liberal payment, and his usual method is to discount the second mortgage by selling it at a substantial reduction in price.

2. Attorneys often have clients' funds available for second mortgage money.

3. There are regular second mortgage institutions which will make the necessary loan on the payment of a bonus which may vary from 5 to 15 per cent of the principal involved, depending on the location of the property, the availability of second mortgage money in that district, and by the amount of second mortgage required. Consideration is also given to the amount of the first mortgage loan. If this is low, the second mortgage money is usually less expensive.

It must be realized that when a house is built under first and second mortgages the owner is dangerously close to the "shoestring" type of financing. Usually a second mortgage loan has an expiration period equal to the first mortgage, but at this point it differs from the first mortgage in that payment is usually demanded, or at least a substantial reduction of the principal, at the time the second mortgage falls due. Savings banks, title companies and other sound financial institutions do not deal in second mortgages, and consequently this business is often left to a less dependable class of business men. While many sources of second mortgage money are dependable and honorable in their business dealings, there exists, unfortunately, a class of second mortgage dealers known as "second mortgage sharks." Their policy is to make a second mortgage loan, charging as great a bonus as it will bear, and to foreclose immediately upon the termination of the loan period unless the owner pays off the entire principal. Through this method many house owners who have overestimated their financial powers are forced out by foreclosure proceedings, and 20 or 25 per cent investments become entire losses to them.

*Financing through Building and Loan Associations.* As each year passes, building and loan associa-



tions assume a more important position in the field of mortgage financing. All building and loan associations operate on substantially the same basis. A building and loan association is essentially a type of savings bank, established primarily as a depository for accumulating funds in savings accounts of prospective home builders. As the building and loan association usually pays interest at  $4\frac{1}{2}$  to 5 per cent, it is but natural that many individuals should use such institutions for the purpose of investment without considering the future building of a house. Consequently, large sums of money are diverted through such channels into the field of mortgage financing entirely restricted to loaning on moderate-cost dwellings.

In most states building and loan associations are allowed legally to make more liberal loans, sometimes as high as 75 or 80 per cent of the appraised value of land and building, although the average loan is for not much over 60 per cent.

The procedure of borrowing from a building and loan association includes, first, the taking out of a membership and the opening of a savings account. When the client is ready to build an application is made for a building and permanent mortgage loan accompanied by a description of the land and a carefully drawn set of plans and specifications. The land is appraised and the plans and specifications are carefully examined by a competent architect who represents the association. Recommendations are then made, and the loan application passes the scrutiny of a board or committee. If the loan is passed the money is usually made available to the borrower in four payments as the building progresses, the first payment being due when the foundation is completed; the second, when the roof is ready for final covering; the third, when the brown or white plaster coat is completed, and the last payment 30 days after completion of the building. The mortgage is usually paid off at the rate of 1 per cent of its face value per month; that is, a \$6,000 building and loan mortgage would be payable at the rate of \$60 a month. This amount, however, includes not only amortization of the principal but interest as well. Thus to completely pay off the mortgage at this monthly rate requires approximately 11 years and 7 months.

It is quite customary to pay off on this mortgage until it has been reduced to approximately a 50 per cent valuation basis. It may then be replaced with a straight mortgage from some loaning institution. The costs of obtaining a building and loan mortgage, which must be paid by the borrower, include the cost of drawing of necessary papers, a fee for the time required to examine land and plans, the cost of title insurance or abstract work, the cost of a fire insurance policy, and other items which amount in

all to approximately 3 or 4 per cent of the face value of the mortgage. In other words, preliminary costs in placing a \$6,000 building and loan mortgage will be usually from \$200 to \$250.

*Importance of Well Prepared Plans and Specifications.* In applying for a mortgage loan from a building and loan association or through any other channel it is of great importance that the plans and specifications be well prepared and practicable. We have been assured by a number of building and loan association officials that they invariably loan more liberally on the work of certain architects whose work has been established favorably with them, because they are certain of the architects' ability to design a dwelling which will hold up its value in the real estate field and which will be well constructed to represent sound collateral for the loan. This is a situation in which the architect can be very helpful to a client and can justify an important element of his service if he is able to assist in mortgage financing, and particularly if he has cultivated contacts through various mortgage channels where his work is regarded favorably.

There is no field in which the architect finds it so difficult to justify his charges as in the small house field. This is not because his services are unnecessary, but because the average prospective builder of a moderate-cost dwelling feels that the services of an architect constitute a form of luxury which he cannot afford. It is, therefore, necessary to indicate to the owner the various divisions of practical service which the architect can render. Aside from better designing than usually available through stock plans or contractor's plans, such service includes practical advice in the purchasing of materials and equipment, in the placing of the general contract or sub-contracts, and in careful supervision to see that the work is properly carried out. In all these branches of service there should be a definite cash saving which will offset the architect's fees and if, in addition, the architect is in the position to advise his client in regard to mortgage financing, there can be no question that much more of this moderate-cost dwelling work would fall to the part of architects. Almost invariably the client has a definite financial problem, and in many instances he needs a form of service which will help him to make up the difference between the cash he has and the balance of equity above the normal first mortgage.

Naturally, the method of mortgage financing will vary somewhat according to local conditions, but in this article we have attempted to cover in a general way every mortgage situation which might arise. The architect who will take the trouble to carefully analyze the mortgage situation in the districts in which he operates will find this a means toward a material increase in the volume of his work.



# ENGLISH ARCHITECTURAL DETAILS

A SERIES OF MEASURED DRAWINGS

By HOWARD MOÏSE

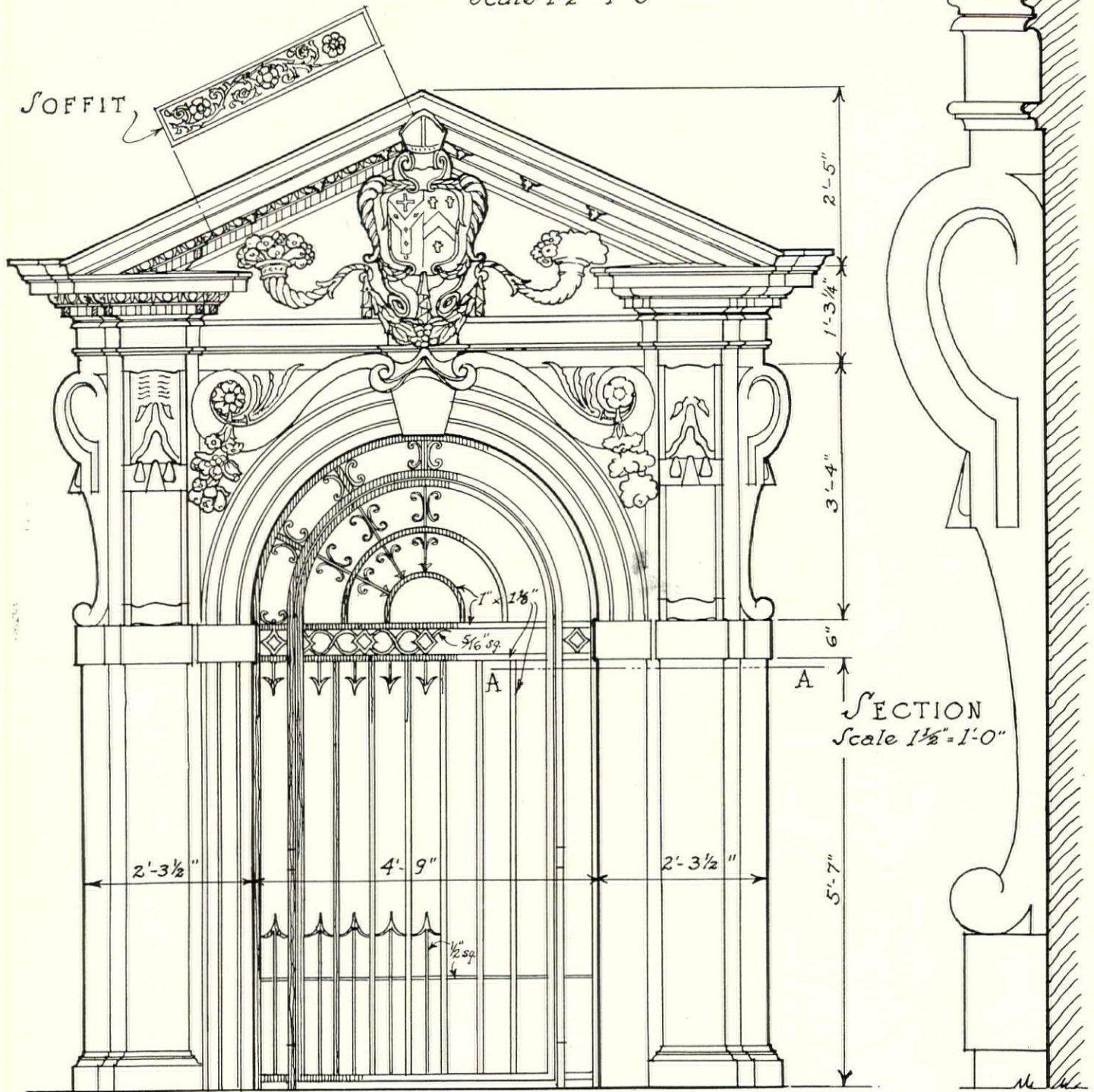


STONE DOORWAY  
ST. JOHN'S COLLEGE, OXFORD

THE design of this doorway into the garden at St. John's College, Oxford, is often attributed to Inigo Jones. One writer, in 1688, tells of the new buildings at St. John's, begun by Archbishop Laud in 1631, as "fashioned in an excellent symmetry according to the exactest rules of modern architecture." Other writers have taken the position that it could hardly be Jones' work since he was steeped with Palladianism, while St. John's gives much evidence of Flemish influence. The detail is rather plain but well executed, and in certain respects it is so similar to work at Winchester known to be by Le Sueur that it may have been designed and executed by him. Just above the doorway is an oriel window the design of which, connected with that of the door, shows the use of detail even more unmistakably Flemish. The gates, made about 1695, were originally partly gilt.



- PLAN - A - A -  
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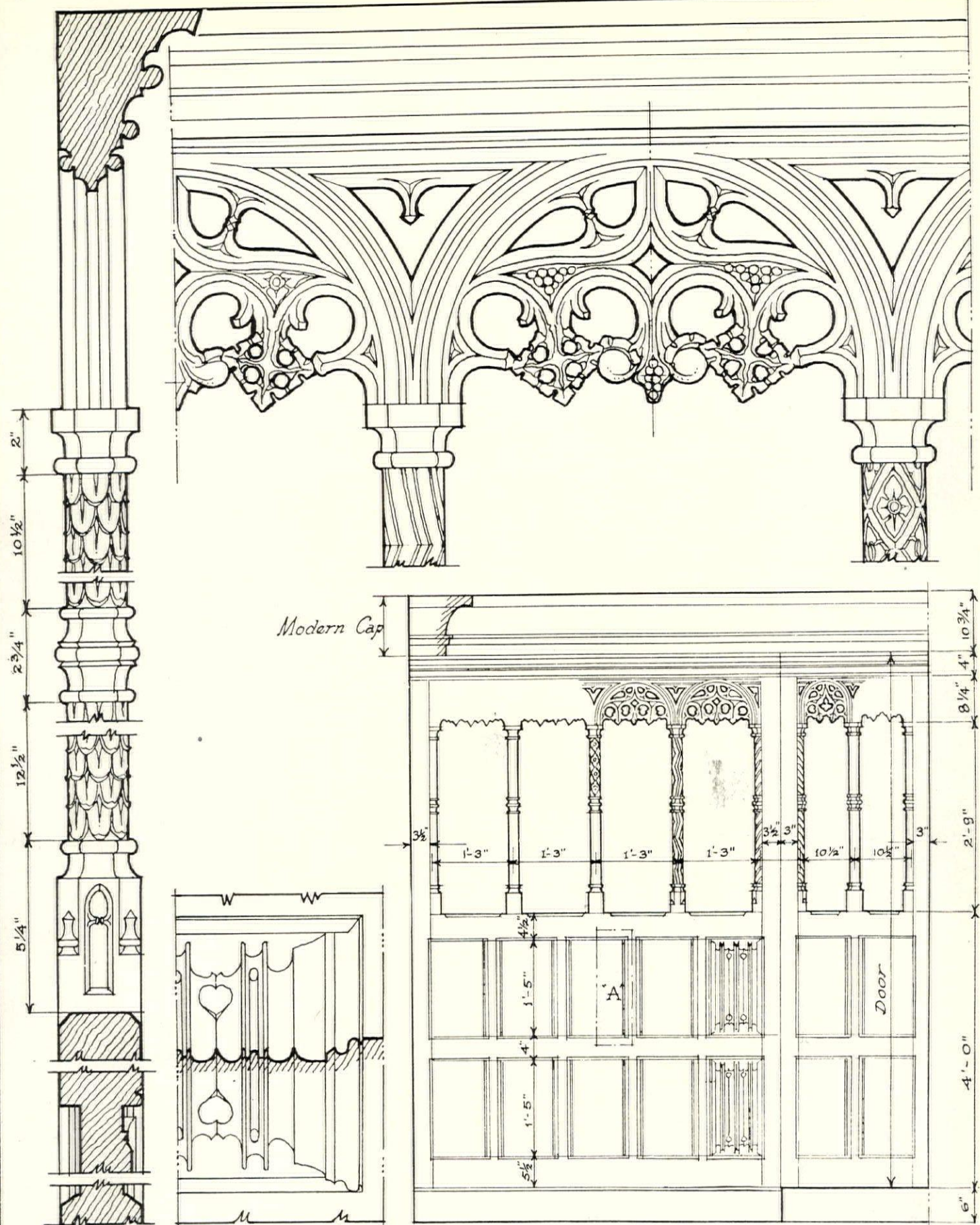
- ELEVATION -  
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ENGLISH  
DETAILS  
1923

- STONE - DOORWAY -  
- SAINT - JOHN'S - COLLEGE - OXFORD -

MEASURED and  
DRAWN by  
HOWARD MOISE





SECTION - DETAIL ELEV. "A" -  
Scale 3" = 1'-0"

HALF - ELEVATION -  
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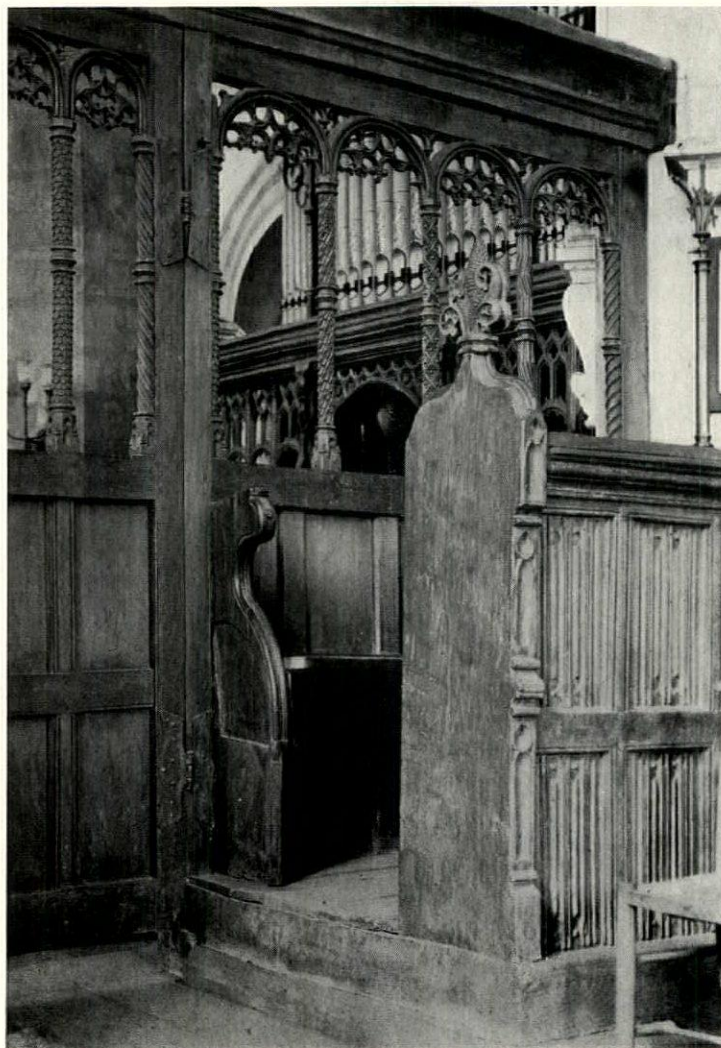
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- OAK ROOD SCREEN -  
- THAME CHURCH OXFORDSHIRE -

MEASURED and  
DRAWN by  
HOWARD MOISE



## ENGLISH ARCHITECTURAL DETAILS



OAK ROOD SCREEN  
THAME CHURCH, OXFORDSHIRE

THIS rood screen stands in an early Norman church, and its design is partially Norman to agree with the architecture of the original building and partly Gothic to correspond with many later additions to the fabric and much of its interior ornament. Thus the form of the arches and the ornament of the slender colonnettes are unmistakably Norman, while the ornament within the arches and the use of linen fold paneling is of course Gothic.

A church used during the Gothic period often retains the form of rood screen which effectually shuts off the nave from the choir and sanctuary, this often being to accommodate the "return stalls" which face the altar.



# ENGINEERING DEPARTMENT

Charles A. Whittemore, *Associate Editor*

## Stages in College Auditoriums

By GERTRUDE LINNELL

*Technical Director, Frank McEntee's Shakespeare Playhouse Co.*

WHEN I, as Technical Director of the Shakespeare Playhouse Company (playing universities and colleges), get into a new town, do I take a few hours off, to rest and freshen myself after the long train trip, before going over to the hall in a leisurely manner, to set the stage? No, most decidedly I do not. Instead, I rush straight from the train, often leaving another member of the company to engage my room at the hotel, for I know by long and bitter experience that something is going to be radically wrong with the building in which I am to work, and that it must be remedied before I can begin what should be my work.

In some instances this cannot be done as the building was not intended for use by actors, but for some quite different purpose; but in most cases it can be remedied with a little thought and expense. In many cases it has been the result of ignorance of stage needs on the part of the builders, and it would be a long and expensive process to remedy such shortcomings in a building that is often well designed in other respects. And meanwhile the actors travel four or five hours, many times much longer, before they even reach the town where they are to play, and then face sometimes as much as eight hours' labor before they can give a performance. And after the performance they have to pack, and make another train, and go through the same old grind again!

The universities and colleges and even the high schools all over the country are developing new interest in dramatics, and putting on for themselves plays with exactly the same requirements as ours. The faculties are being educated in theatrical lore by their own pupils—unless they are leading the classes themselves. The janitor has very likely worked as a stage hand; in other words, from all sides the architect who does not know the requirements of theatrical performances, and does not recognize their importance, is laying himself open to wider and wider criticism.

While the ideal conditions for presenting a play are rarely possible in a many-purpose building, it might be well to describe an average theater that would be wholly satisfactory for professional presentations. It must not be supposed, of course, that my measurements are static; the Plymouth Theater in New York, for instance, has a depth of, I think, 27 feet, and the Greenwich Village only 25, though

both stages have been used for very beautiful productions in spite of their shallowness. It has, however, required a good deal of juggling on the part of their producers to make them so.

The proscenium should be 30 feet wide by 25 high. The gridiron should be at least 50 feet above the stage floor, should cover the full acting space of the stage, and be fitted with a set of lines every 2 feet of its depth. Each set of lines should consist of four individual lines running through steel blocks set at regular intervals over a width of about 25 feet over the center of the stage, and tying off at one side on a pin rail, either in a special gallery at least 20 feet above the stage floor, which is the best way, as it leaves the stage clear for working, or on the floor if necessary. There is also a counterweight system in use in many of the best equipped theaters, notably the Academy of Music in Brooklyn, which does away with the necessity for a fly gallery and the two or more flymen otherwise needful. Its only disadvantage seems to lie in the fact that since the whole four lines must be combined in a single cable in order to be effectively counterweighted, and since the lines themselves are hemp, they stretch unevenly and have to be individually adjusted at the batten instead of in the hand of the flyman. This is also possible to obviate by using a steel cable and fastening it permanently to a pipe batten, to which is tied the batten of the drop to be attached.

This latter method is very expensive to install, but it will ultimately save its extra cost in labor, since one man can manage any number of curtains, drops and solid pieces without leaving the stage. There should be a stairway into the basement on each side of the stage, to do away with the constant tramping of stagehands, extra people, etc., back and forth across the stage. There should be footlights, first, second, third and fourth borders, wired on three different circuits each for rose, blue and amber or white; two four-way or three two-way stage pockets on each side of the stage, and a switchboard that will control the whole lighting system of the house with the exception of the exit lights on one main switch, and the whole lighting system of the stage on a second main switch. There should be separate dimmers for every circuit on the stage, plainly marked. The voltage should be 110 or 120 unless the theater is to be equipped with its own



complete set of lights, as the companies that play at colleges will carry equipment of that voltage, knowing that it will be correct nineteen times out of twenty. If alternating current is to be used, all stage pockets should of course be of the same polarity. Professional theaters nearly always use 220 voltage.

The stage should be on the ground floor or else some provision must be made for getting heavy baggage upstairs, and a large entrance be provided for its reception. The proscenium does not have to be dead center, but at least 10 feet should be left on the short side from the proscenium line. There should be upward of eight dressing rooms, not too far from the stage, their lights controlled by a switch on the main switchboard, so that signals can be flashed to the actors. Having exhausted the "things we cannot do without," we may proceed to the irreducible minimum that we would be glad if we could always find.

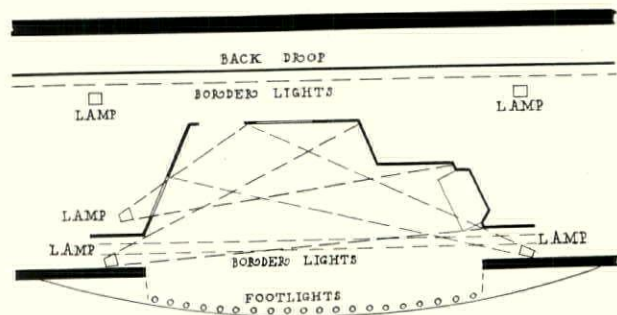
Most of the auditoriums being erected, and they are many, are intended to be used for many purposes other than as theaters. Some of them are regularly gymnasiums, some chapels, some lecture halls, but nearly always some problem of adaptation has to be met. More frequently than not there is an organ to be installed, inside or around the proscenium. Three typical examples of such treatment come to my mind. I am purposely not mentioning by name the colleges where they may be found, though the examples may prove useful.

In the first, the most difficult for our use, the hall was intended for the college chapel, and it is being used for a theater only until such time as a more suitable building can be erected, and so deserves no criticism; but it is, nevertheless, a fair example of the difficulties which we meet. The roof is probably, at a fair guess from memory, 70 feet high at the center, and probably 40 at the sides, with a balcony running around three sides of the auditorium at a height of about 25 feet. The distance between the balconies at the sides is over 50 feet, and is occupied by a platform with no enclosure at all, even under the balcony. The back of the stage consists of a long slope of choir stalls, surmounted by an organ the console of which juts into the stage at the center, leaving scarcely room enough for our setting. We carry for just such emergencies some pieces of curtain, 20 x 20, and with the aid of a cable which the college had used in previous struggles, we closed in the stage with our curtains along its seemingly endless width in such a way that we could set our scene behind it; but there was no way of suggesting a ceiling when we had drawn the curtain to reveal the set, and there was no way of putting any backing for our doorways behind the set, or of crossing behind it, excepting by first carefully seeing that the doors were shut, and then running.

The second example is one in which the organ stands straight up at the center-back of a well equipped stage, and the console is in front of the proscenium. Since the organ was placed about 20

feet back from the proscenium it left us sufficient space to play in, and I was well pleased with it, but the local professor of music thought differently, as he said the proscenium interfered with the organ.

The third, however, was so good, so efficient and so practical that it deserves the admiration of every architect in the country, for not only did it meet our requirements completely, but on inquiring of the local professor of music I heard nothing but praise; the hall is also used for commencement exercises, lectures, and, I believe, motion pictures. This also provides for the organ console in front of the proscenium, and the pipes were disposed behind ornamental grilles, around and just above the proscenium arch, on the outside, leaving the stage entirely free, and providing the possibility, which had not as yet been made use of, of installing grid-iron apparatus. There was a temporary arrangement of gas pipes which was quite usable for a simple setting. This was a large and very expensive hall with a beautiful facade and a luxurious interior, and the organ difficulty was solved in a manner worthy of it.



Method of Lighting an Interior Setting

All of the indicated lights are not always used; often many special lamps are added. Note how little light can possibly reach the apron

A very frequent lack, we find, is that of depth to the stage. Of course in some cases that cannot be avoided, for some reason over which the architect has no control, but it should be made an axiom in designing such a building that there be at least 20 feet behind the curtain line. That gives 3 feet of passageway between the backing and the back wall, a possible 4 feet from the backing to the walls of the set, still leaving 13 feet to the curtain line for playing space, with a possible 2 feet more to the footlight line. This will be found sufficient for most modern plays, though it should not deter a builder from providing 30 if he can.

Remember that a passage across the stage is always necessary. It must be behind the setting, because there is no other place for it, and there must be space enough between the backing and the set for the actors to make their entrances and exits otherwise than in crab fashion. Too many architects seem to think that the whole space between the back wall and the footlights is playing space. There should also be a passage under the stage, especially if the stage is shallow. If the stage is enclosed by walls or ceiling, keep it wide enough to



permit of stacking scenery inside the walls, or, better yet, make part of the walls removable at will, to give wing space. I have seen stages where scenery could be brought on or off only through the auditorium, which meant that no change of scene was possible during the evening. Never enclose a stage in solid walls unless it is demanded, and if you must close it in, either make your proscenium lap as far as possible inside the walls, or else make provision for a false proscenium of curtains or woodwork (not allowed where there are fire laws), or, best of all, make the walls themselves removable in sections.

The back wall of a shallow stage can be made very useful as a cyclorama if kept unencumbered by entrances, heating pipes or paneled divisions, or the other impedimenta which so often clutter it. This is especially true if a passageway is provided behind it.

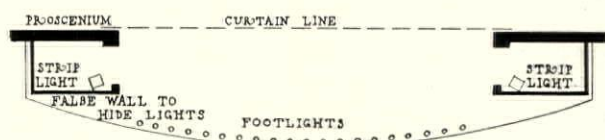
In cases where an over-large proscenium is necessary, a false proscenium of the same material as the house curtain will be found useful. This is a border and two side strips (legs or tormenters) hanging just behind the curtain itself, and hung so that they can be closed in or opened out to make a larger or smaller opening. With modern fireproofing methods there is practically no danger from fire even without an asbestos curtain, but there is always the danger of a puff of smoke, from any cause, creating panic.

Most house curtains in many-purpose buildings are of the sort that divides in the center rather than the type that raises and lowers. It is more graceful and more dignified for the many uses to which it is likely to be put. A simple draw curtain, running backward and forward on a rod, is always more satisfactory, though not so decorative as a tableau curtain. The tableau curtain makes an uneven frame, requiring the use of leg and borders behind it; it is heavy to draw, and as the ropes stretch, must be continually readjusted. But whatever type of curtain you specify, at least make it controllable from one spot, preferably by one man, and from the side on which is placed the electrical switchboard. The stage manager otherwise has to run backward and forward from one side to the other innumerable times during the evening, and when two cues come too close together, as they often do, in trying to get across there is danger of muffing.

As to the means of control for a house curtain, there is every method from the simple lines running through blocks or rings and held in the hand, through the old fashioned drum arrangement, to the most modern electrical control. The drum is very unsatisfactory as it is too easy to wind the wrong way in emergencies. The electric motor, though efficient and easy, is too deliberate a thing for play purposes, as it cannot be regulated to different speeds, which is most desirable; some acts require a quick and others a slow curtain. The best is the traverse curtain, used on house window draperies by every decorator in the country—a single continuous line attached to the inside edges of the curtain, so that one man can control it at

any desired speed. I once ran across a curtain that needed four different men in four different places to operate it. Needless to say, every single finale, though we rehearsed them carefully, was jerky and slow.

The apron is the projection of the stage in front of the curtain line. Excepting for certain spectacular productions, and then only when special lighting effects are desired, more than 3 feet of apron is not only waste space but is a real difficulty in the way of production. In many made-over auditoriums this apron is tremendous, and is an attempt to offset a too shallow stage. Like most makeshifts it is very unsatisfactory, especially for the intimate type of modern play, as it leaves a large space that is impossible to light excepting by spot lights across the audience and by footlights. The cross-audience spot light is frowned upon excepting in the technique of musical comedy, or for special effects when needed, because of the sharp shadows it must cast on back drops and scenery. Footlights are very useful and should be included in the equipment of every theater, but used alone they are the ugliest of all lights. Another disadvantage of wide aprons is the bare state they must always be left in. No furniture, prop or scenery can be put in front of the curtain unless it is to stay there throughout the evening. Nothing would be more fatal to illusion than to see a property man changing furniture in front of the curtain, so the apron must remain bare, and the actors cannot go down on it during the action of the play because the lighting will be different from that on the set.



Suggested Way to Make a Large Apron Less Objectionable

However, one way the apron can be made useful if it is necessary to have it, is by erecting a false wall on each side of and in front of the proscenium, as near the front of the apron as possible, to hide strip or bunch lights, which will aid materially in lighting the apron, and the stage as well. These pieces can be as lightly constructed as necessary so long as they are light-proof; mere frames covered with canvas and removable at will may be used, or they can be incorporated as a part of the building. In the latter case if there is also included a hood to match, and the house curtain and a strip of border lights hung inside, there are overcome almost all the objections to an apron stage. Earl Carroll, in his beautiful new theater in New York, has a regular stage, with a straight row of footlights, an apron that can be raised or lowered out of sight, and a permanent hood with a second house curtain that can be put up when desired, to cover the apron. Under such circumstances an apron becomes a thing to conjure with instead of a dreary expanse of waste space, but



unfortunately the fire laws of New York will not permit its use!

Inside the proscenium we must have some practical method of hanging our scenery. Flats, that is flat units of scenery, may be toggled together, and will stand alone like a screen, but a ceiling cannot be put on top of it, or even borders without some arrangement for hanging, and the back drop must also be hung, so that even for the simplest of interiors four sets of lines are required at the least—three for the ceiling, and one for the back drop. Practically everything in an outdoor set must be hung. A regular professional equipment of gridiron and sets of lines or even a really modern counter-weight system (which will save its extra cost in lowered cost of operation) should not be too great a strain on a \$100,000 or \$150,000 building.

A more simple arrangement of pulleys and lines that can be worked through holes in the ceiling costs very little indeed, but of course care should be taken that the girders on which it hangs are heavy enough to stand any weight that may be put on them. This arrangement through the ceiling works very well where only an occasional play is to be given. There should easily be room for six or eight sets of lines in a medium sized ceiling without giving it too polka-dotted an appearance. It is really the only practical arrangement where the building is used customarily for lectures or concerts. Such an arrangement is in use in Carnegie Hall, New York, but with a complete gridiron system hidden above.

Usable electrical outlets are the most important, simple and easily furnished commodity. I lately went into a building that will serve as a good example of what not to do. In this case the equipment was beyond reproach for gymnasium or assembly purposes, with a plentiful supply of electrical current, and a great deal of money had been spent on fixtures that should afford protection for the bulbs and at the same time be attractive in appearance. But the control was from two separate boxes, one at the front of the auditorium, and one on the stage, so close to the proscenium arch that it was almost impossible to reach it at all during the play. These boxes, instead of having one simple control switch in each, had a series of push-buttons such as would be excellent in the front hall of a residence, but for us were absolutely useless. There were, besides, only two ordinary wall plugs, intended for a lecturer's reading lamp, into which we had to connect as much of our lighting equipment as we dared, with the fear of an overloaded circuit staring us in the face. One wonders why, when the builders were putting in those boxes, they did not include in their stage switchbox a main knife switch for the stage lights and another for the auditorium. If they had, we could have tapped the stage switch in twenty minutes, which would have saved making mad signals to the man at the house switchbox in front of the audience every time we wanted to start an act, besides leaving off half of our lighting because there

was no way of attaching it, and saving two hours' work jamming cable twice too large into ordinary reading lamp wall plugs. The total extra cost of those switches would have been exactly the cost of the switches themselves, if installed at the time of building—about \$5. To change now would cost much more, but sooner or later it will have to be done, for no one can get any results with such an arrangement.

I have said nothing at all about professional lighting equipment, as any architect intending to put in such equipment must get estimates from a professional lighting company. If he decides to allow a general sub-contractor to handle the work he should be very sure the man has done work of the same sort in a satisfactory manner before. However, there is one suggestion I will make. If one can have stage plugs, full sized and of some standard make should be had. The difference in cost is exceedingly small, but the difference in satisfaction to all who use them is tremendous. If possible provide two or three border lights at least, and footlights. There is no excuse for not providing footlights, though there is a rumor current among "little theater" enthusiasts to the effect that footlights are no longer the thing. That rumor is quite confined to the little theater movement, since even the most modernistic of the professional designers use at least some footlights to take off the curse of overhead lighting. But the footlights need not extend beyond the edge of the tormenter line. There is no use in lighting the picture frame. They can be made to sink into the floor when not in use. If one can have only light borders, place the second so that it will light the back drop instead of the center of the stage. There should be no reason for not having three, however.

Then, last, but dear to the heart of the actor, we come to dressing rooms. The first necessity is for two, each large enough for five people to dress comfortably. We much prefer at least four, but the irreducible minimum is two. They should not be mere passageways from the auditorium to the stage, as they so often are, for obvious reasons, nor should there be a single light only, hanging from the ceiling 12 or 15 feet above the actors' heads. Find out from the owners whether they are going to furnish the dressing rooms with tables and mirrors or dressing tables, and if they are not, provide for 18-inch shelves 3 feet from the floor, with mirrors above, and four electric light bulbs around each mirror. If they are going to put in dressing tables, use the lights anyway.

Don't forget that actors will need hooks to hang clothes on,—just as many as there is room for,—and running water, for how can they put on grease paint and cold cream and then handle costumes that must be fresh and clean when they have no water to wash their hands? Again, don't put water in one dressing room and not in the others, for actors prefer to do their washing separately.



# The Industrial Cafeteria

By N. W. ALDRICH

THE industrial cafeteria during the past few years has not only become popular but has proved to be a necessity, especially where so many large industries are now located in the outskirts of cities where employees do not have time at noon to go home for lunch. Employers have found that better results are obtained from employees properly cared for and provided with proper food, and for many reasons the cafeteria should take high rank with other modern conveniences.

To find the proper location for this department is not always the easiest problem in modern factories, and unless the architect or engineer provides for it while making preliminary plans he will in most cases find himself in difficulty when he tries to borrow, beg or steal sufficient floor space in a desirable location for the cafeteria or restaurant. It is customary to locate cafeterias or lunch rooms as near as possible to a section of the building where water supply, gas and soil pipes are located. This is generally done because of the fact that in such a location cafeteria fixtures may be installed at less expense and at a saving on plumbing. It is not always advisable to do this, since the grease from these fixtures alone, if properly trapped and cared for, would in a short time pay for the added cost in plumbing involved in placing the cafeteria in a more desirable location. Dressing rooms, lavatories, etc., should be away from this department if possible. Employees who work in the cafeteria should care for their personal appearance before reporting for duty, and the manager who allows even a mirror to be hung in the kitchen will have no one but himself to blame when someone finds a side comb in the hash or a powder puff in the mashed potatoes.

In order that food may be prepared and properly served and appreciated by those concerned, care must be taken that sanitary conditions prevail throughout, and unless such conditions are possible, the restaurant manager or cafeteria director is often blamed for things for which he is not responsible. It is not all sunshine for the manager of this department, as some may believe. In the first place, he is as a rule employed by people who know practically nothing about the workings of his department, and although he is supposed to have full charge, there is no end to suggestions. While he is not required to show a profit in his department, he is expected to furnish the best at a lower price than the lunch room proprietor who has a stand across the street. He must satisfy everyone employed in the factory, from the typist who insists upon salads and eclairs three times a week during the winter months to the man in overalls whose appetite calls for roast pork and plum pudding three times a week in hot weather. He may try his best to please everyone, but this is im-

possible. He realizes the importance of changing the menu daily as well as serving a variety of foods. He also realizes that preparing the variety that would please everyone would mean a great loss, and that the cash register would never balance the garbage can. Therefore, provision should be made for preparing and serving a variety of food, but the variety should never be overdone or expected to compete with that of the public cafeteria, excepting in the larger plants where a thousand or more people are catered to each day.

Many managements of the larger industries have solved this problem by erecting service buildings which provide rest rooms, club rooms, hospitals and other conveniences as well as lunch rooms or cafeterias. It is needless to say that service buildings are ideal, providing they are of sufficient size, but in many cases these buildings, which are as a rule erected principally with the cafeteria in view, do not contain adequate space on one floor alone for this purpose. Compare the cost of constructing a modern service building with that of an extra story on the factory! Also, compare the advantage of having seating capacity for at least one-half the number employed, as well as kitchen, store rooms and serving counters on the same floor. While many cafeterias may have seating capacity for one-fourth or one-third the number who lunch daily, there is more chance for confliction and dissatisfaction among those in charge of the various factory departments, owing to the fact that luncheon time really covers a period from 11:30 until perhaps 1:30 or 2 o'clock. Feeding employees in relays not only makes extra work for the cafeteria manager but will at the same time prevent his furnishing 100 per cent service. This perhaps would not apply to department stores, where a few from each department lunch at the same time, and in such cases there is as a rule a continuous and steady service, but at no time is there the rush that would compare with that of the factory employees, and time would permit the collecting of soiled dishes and the caring for tables properly as well as replenishing supplies at service stations.

Opinions relating to the capacity of a cafeteria counter are so varied that it is almost impossible to estimate the exact number of persons who may be served in a given time. This will depend upon several conditions, among which are the placing of the cafeteria in a location which is desirable as well as suitable and, what is quite as important, the conducting of the cafeteria by an able and experienced director who is backed up by the necessary co-operation. Were we to consider, for example, the cafeterias installed at the various large shipyards and other industries during the war, we would be safe in saying that 250 persons could be served in 10 minutes at a



single counter without any confusion to patrons.

The diagram on this page shows a two-way or double service station with two distinct counters, each of which should have a capacity of serving 250 persons in 10 minutes, providing a few days have been allowed for the patrons to become familiar with the service. Time is required for the employees as well as for the patrons to become accustomed to the service. Providing 1,000 persons are to be served from these two counters, sufficient time should be allowed between the first and second relays in order that all dishes may be returned to the dish rooms, the tables properly arranged, and the counters redressed and made as fresh and inviting in every detail for the second relay as for the first.

Few people realize the amount of space required for properly washing dishes, and that unless suitable tables are provided to care for soiled dishes the breakage will be one of the chief items of expense which must be contended with. The soiled dish table is in most cases set against a wall or partition because space will not permit any other arrangement,

but whenever it is possible to set this table away from the wall it is advisable to do so. If this can be done the table may be 3 or 4 feet wide instead of 30 inches, and it will allow those operating the washing machine to work without interference with those bringing soiled dishes from the table; best of all, it will insure sanitation which cannot be obtained with wall fixtures. If more architects and engineers had studied cafeteria planning more carefully it would have greatly lightened the burdens of those who must O.K. crockery bills!

Kitchen equipment will vary according to requirements and fuel, and wherever it is possible to supply high pressure steam it is advisable to do so. Use of jacketed kettles and vegetable steamers will not only reduce the fuel bills, but will be more convenient for cooking in quantities, and it is quite as necessary for heating steam tables, coffee urns, dish heaters, etc. The man who figures that he can operate his cafeteria successfully by buying pastry is in most cases mistaken. The success of 90 per cent of the industrial cafeterias depends upon their supplying good pastry and good coffee. This has been proved by some of the successful cafeterias which were originally started with doughnuts and coffee alone, and which have gradually grown to become important and appreciated departments. Some people are of the opinion that pastry is not wholesome food for employees, yet everyone eats it, and unless allowed to have good pastry, cooked under sanitary conditions, people will insist upon over-indulging at their first opportunity and are not likely to get as good pastry as would be prepared under the supervision of the cafeteria's chef.

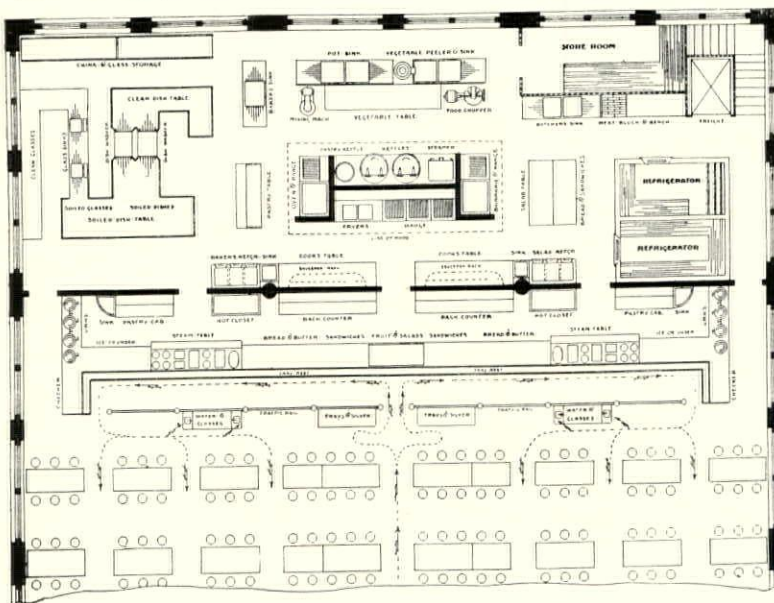
In addition to the cafeteria's counter service some factory managements find it practical to allow the director of this department to distribute food and coffee through the factory as well. Various types and styles of conveyors have been adopted for this purpose, and with the variety of food sometimes provided, such a conveyor would practically amount to a traveling cafeteria in itself.

Careful planning of a cafeteria will aid in making it possible to give service with a comparatively small staff, and this in turn has the effect of reducing overhead costs and increasing earnings. It is often possible, for example, to so arrange the layout that one individual can perform the duties ordinarily assigned to two.

With this department well planned and with proper management and co-operation the employer should in a short time realize the cafeteria's importance in many different ways, and soon forget the cost of installation or the amount of floor space it necessarily occupies.



Counter in Employees' Cafeteria, Wm. Filene's Sons Co. Store, Boston



Plan for a Double Service Cafeteria, Economical and Complete in Layout  
Dimensions of kitchen, 25 x 77 feet



# Removing the Blight from Blighted Neighborhoods

## THE PATERSON PLAN FOR RECLAIMING SPOTTED DISTRICTS

By HERBERT S. SWAN, *City Planner*

THERE are two problems in zoning—one the control of new buildings and the other the control of existing buildings. Zoning looks to the future. It is in no wise retroactive in its provisions. Any sporadic and out-of-place building located anywhere within the city limits is allowed to continue. The ordinance takes no action toward its expulsion from any section of the city.

Every non-conforming building may be used the way it is at present as long as the owner chooses. Structural alterations to the extent of 50 per cent of its assessed value are permitted every non-conforming building, provided the building is not enlarged. Any non-conforming building may, moreover, be changed for any other non-conforming use excepting that of an inferior class. Even after a non-conforming building has been changed for another non-conforming use, so long as the new non-conforming use is not excluded from a light industrial zone, structural alterations equal to 50 per cent of the assessed value of the building are allowed in order to better adapt the building for the new use. If the building is damaged by fire to not more than 50 per cent of its assessed value, it may be reconstructed in full.

One exception is made to these rules, that is, in the case of buildings and uses excluded from light industrial zones. Such a non-conforming use may not be changed for another non-conforming use of the same class in instances where the building has been structurally altered (no matter how much or how little), since the adoption of the ordinance, to make it more adaptable for the original non-conforming use. Moreover, where such a non-conforming use has been changed for another non-conforming use of the same class since the adoption of the ordinance, the building is thereafter prohibited from being in any wise structurally altered.

The practical operation of these provisions may probably be best illustrated by a non-conforming building used as a grocery in a residence zone. Such a building is guaranteed every conceivable right necessary to its continued existence. It may continue as a grocery store for as long a time as its owner chooses, without any interference whatever. It may be used for any other kind of business allowed in a business zone. It may, for instance, be changed into a delicatessen shop, a butcher shop, a bank, a bakery—indeed, into use for almost any of the ordinary businesses commonly found near residence districts. It may have structural alterations made in the building to an extent equal to 50 per cent of its assessed value. If the building is damaged by fire to not more than 50 per cent of its assessed value, it may be reconstructed in its original form. The only limitations upon its free use are that (1) the build-

ing may not be enlarged unless the use is changed into a conforming use; (2) the use may not be extended at the expense of a conforming use, and (3) it may not be changed for another non-conforming use of an inferior class.

These privileges are all matters of right. They are conferred by the zoning ordinance upon the owners of non-conforming buildings throughout the city, and are in no wise dependent upon obtaining the permission of the Board of Zoning Appeals. The ordinance is very clear on the point that regarding these matters the Board of Zoning Appeals need not be considered. Instances may, however, arise where the foregoing limitations might work a hardship in their operation. For such instances, the Board of Zoning Appeals has been constituted to temper the administration of the law with the principles of equity and justice.

If a building used as a store or a factory were allowed in a residential zone and its owners permitted unlimited right of enlargement or of adapting the building to unrestrained changes of use, the owners of adjoining residence property would be discriminated against. Should the land upon which stands the building devoted to non-conforming use be permanently designated as belonging to an industrial zone, irrespective of all extenuating circumstances, it would be a very pertinent question whether the adjoining properties in such a zone should not also be considered industrial zones, and thus the entire purpose of the zoning movement would be in danger of frustration.

Every existing building, given up to any use, no matter where it is situated, has acquired vested rights which the zoning ordinance does absolutely nothing to interfere with. But when the existing use is discontinued and it is proposed to adapt the building for a new use, or when it is proposed to extend the non-conforming use, to enlarge the non-conforming building, to construct a new non-conforming building, or to reconstruct a non-conforming building completely destroyed by fire, the change should, in all justice, be reviewed by an impartial body so that the rights of the adjoining owners in the restricted zone should not be ruthlessly violated and something more injurious to them than the present use be permanently imposed upon their neighborhood. It is for this reason that the Board of Zoning Appeals is established. This board is not formed to evade the settlement of these questions. In the very nature of the case these questions cannot be settled at the time the zoning law is put into effect. As yet the precise question to be settled some time in the future has not presented itself, and therefore no decision has been made.

No owner of a building devoted to a non-conform-



ing use knows just when he wishes to change it for some other non-conforming use or what the new non-conforming use is to be, or when he wishes to enlarge his plant; or, if his plant were to be destroyed in part or whole by fire, whether he would or would not wish to reconstruct his building in its present location and for its present use. These are matters that may not come up for decades. In the meantime, the conditions in the vicinity may have entirely changed, and the owner of the building given up to its present non-conforming use may himself have changed his mind and put his property to a conforming use.

Suppose there were no regulations affecting non-conforming buildings or uses. Assume that every sporadic store were made a business zone and every isolated factory an industrial zone. Then the community would have surrendered every hope of ever reclaiming these small, scattered areas for their proper uses. Every use of this character could be extended whenever the owner chose. New uses could be introduced and established. What is at present a temporary use of the property could be permanently established in the neighborhood. In other words, a small non-conforming use would be invested with all the privileges and immunities of a building located in its proper zone. The owners of the plots upon which such buildings stand could terrorize owners of adjoining property by threatening to construct

buildings more injurious than those there at present, and thus hold back the appropriate development of the entire locality.

The provisions of the zoning ordinance relating to non-conforming buildings, it is thought, will in time go a long way towards righting the wrongs suffered by different neighborhoods from unregulated building in the past. The consequence of controlling the changes of use in non-conforming buildings, to be as far as possible in conformity with the regulations of the use zone in which they are located, will be ultimately to "weed out" many of the sporadic uses which now afflict different localities. The heroic way to treat non-conforming buildings is, of course, to expel them bodily from restricted zones. This would solve the problem at one stroke, but it would be most unjust to the owners of the non-conforming buildings. Regulations designed with a view to preventing an increase in the offensiveness of the uses and to gradually eliminating them altogether will in the end achieve the same result as initial banishment, with this difference; no violence is in the meantime inflicted against the undesired use.

Certainly the non-conforming building must be controlled. Not to limit the extent to which it may be structurally altered or the manner in which it may have its use changed is to entrench it permanently in its present location, to the lasting injury of neighboring property.



Farm Buildings of Walter Douglas, Esq., Dobbs Ferry, N. Y.

Alfred Hopkins, Architect

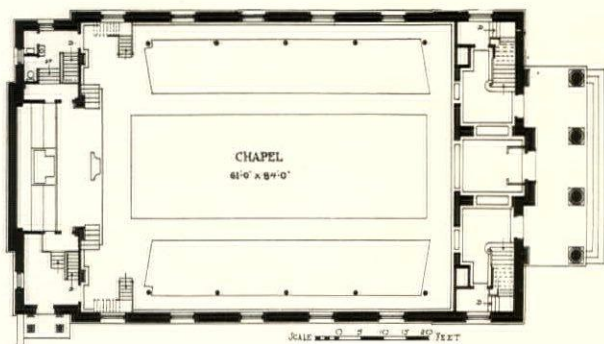
(See Plates for Additional Illustrations)



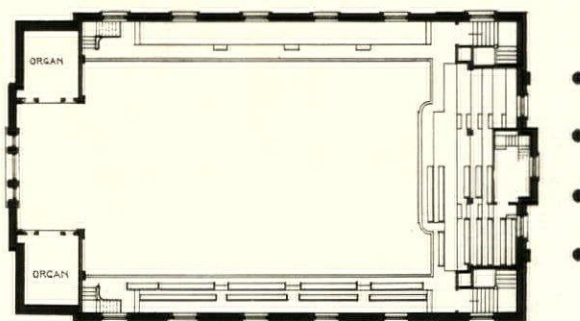


*Photos by Stone Studio*

GENERAL VIEW OF FACADE



FIRST FLOOR PLAN

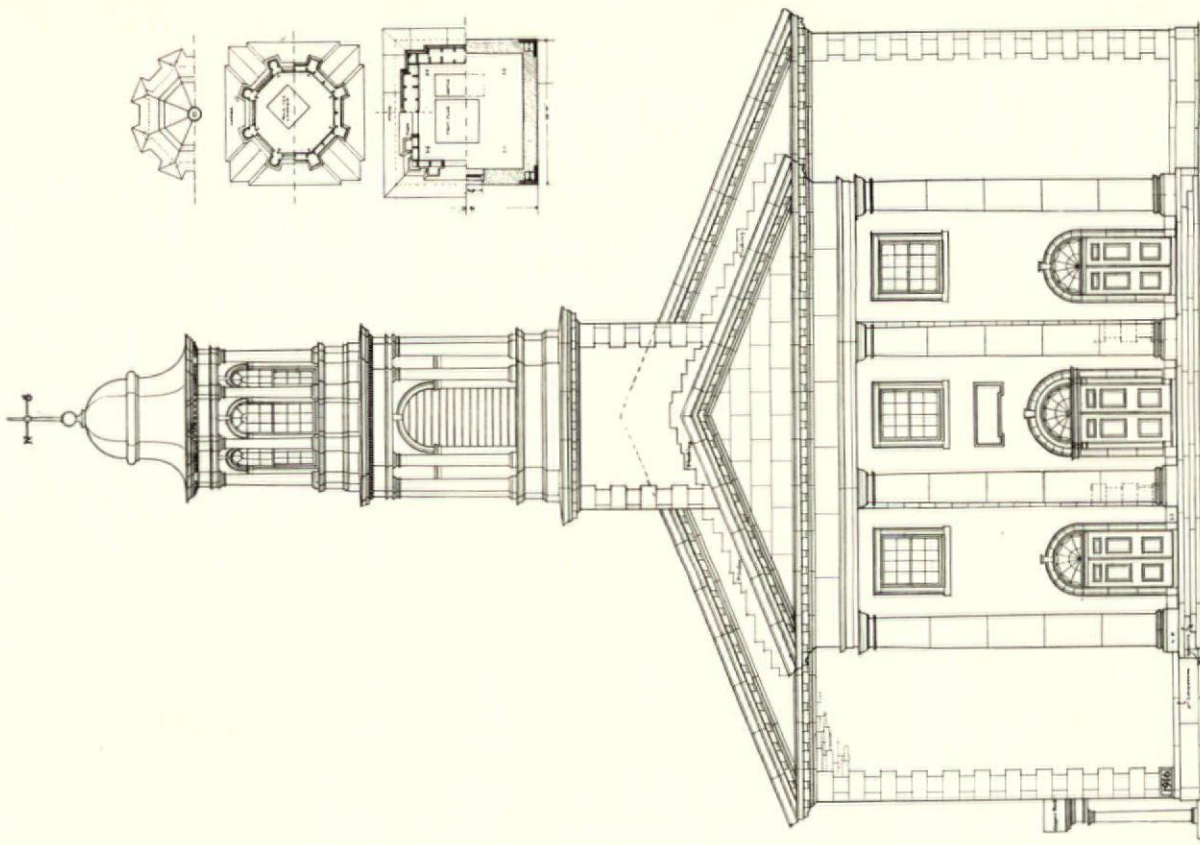


GALLERY FLOOR PLAN

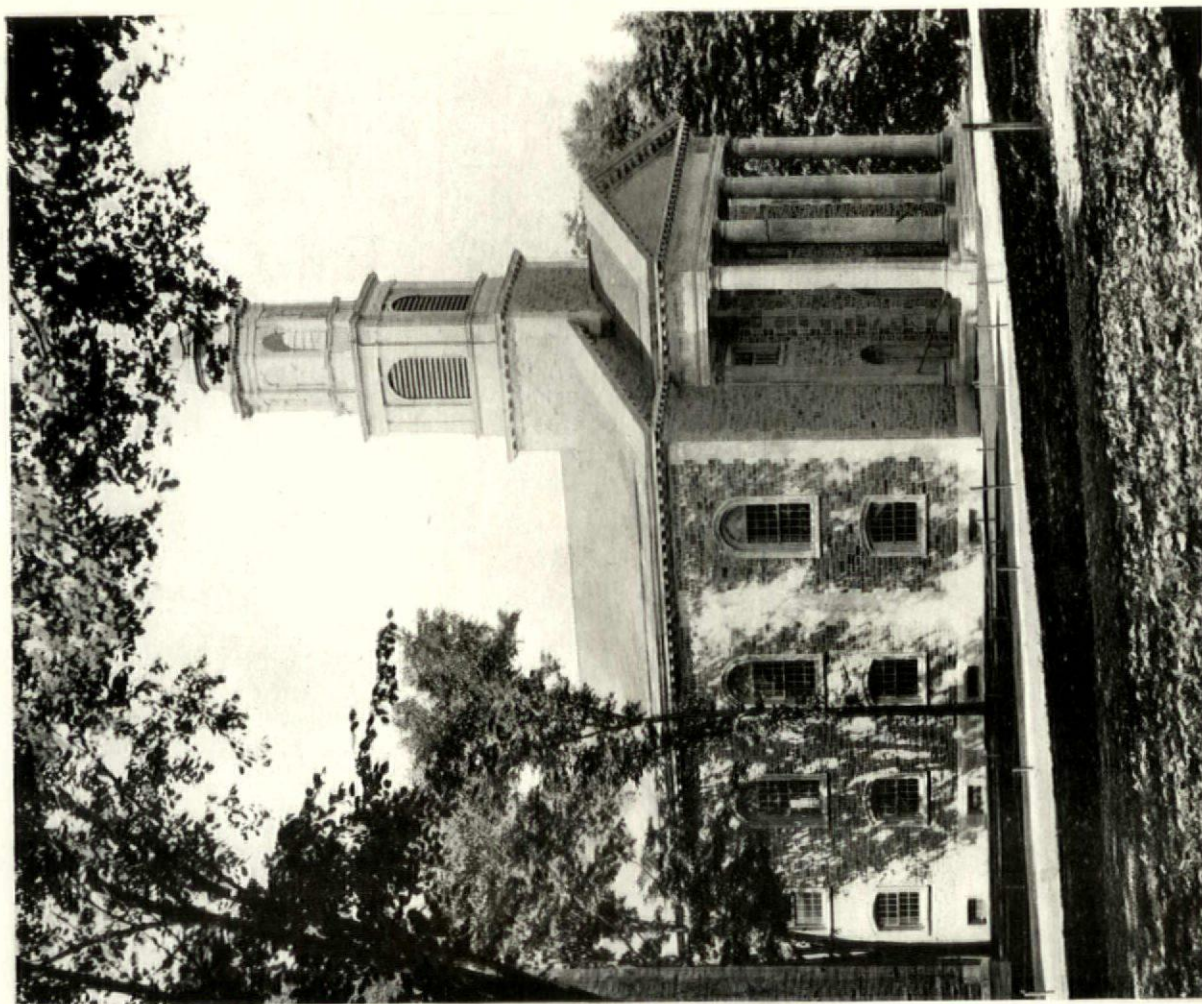
CHAPEL AT COLGATE UNIVERSITY, HAMILTON, N. Y.

HARDING & SEAVER, ARCHITECTS





FRONT ELEVATION



VIEW OF SIDE AND FRONT

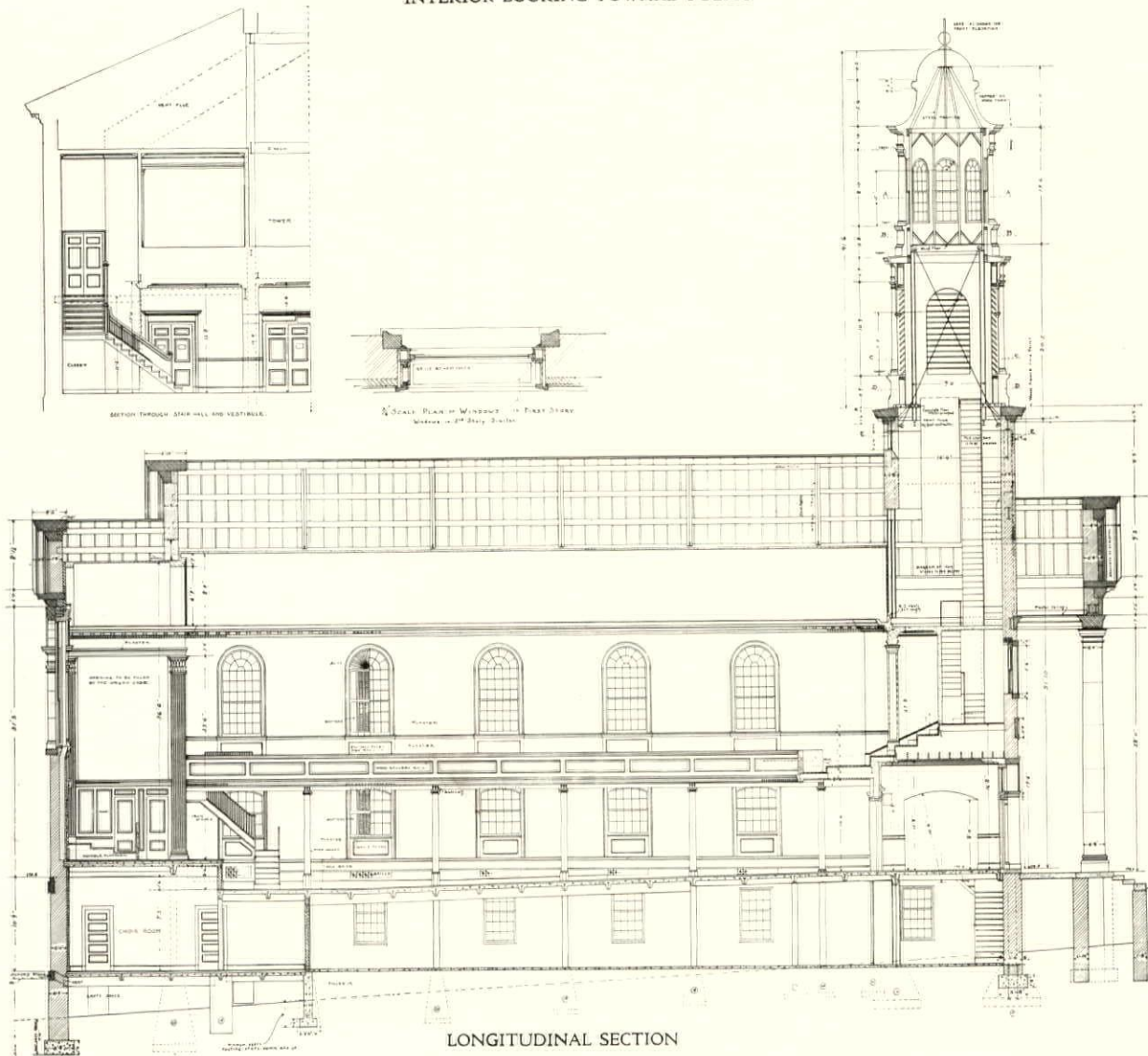
CHAPEL AT COLGATE UNIVERSITY, HAMILTON, N. Y.

HARDING & SEAVER, ARCHITECTS





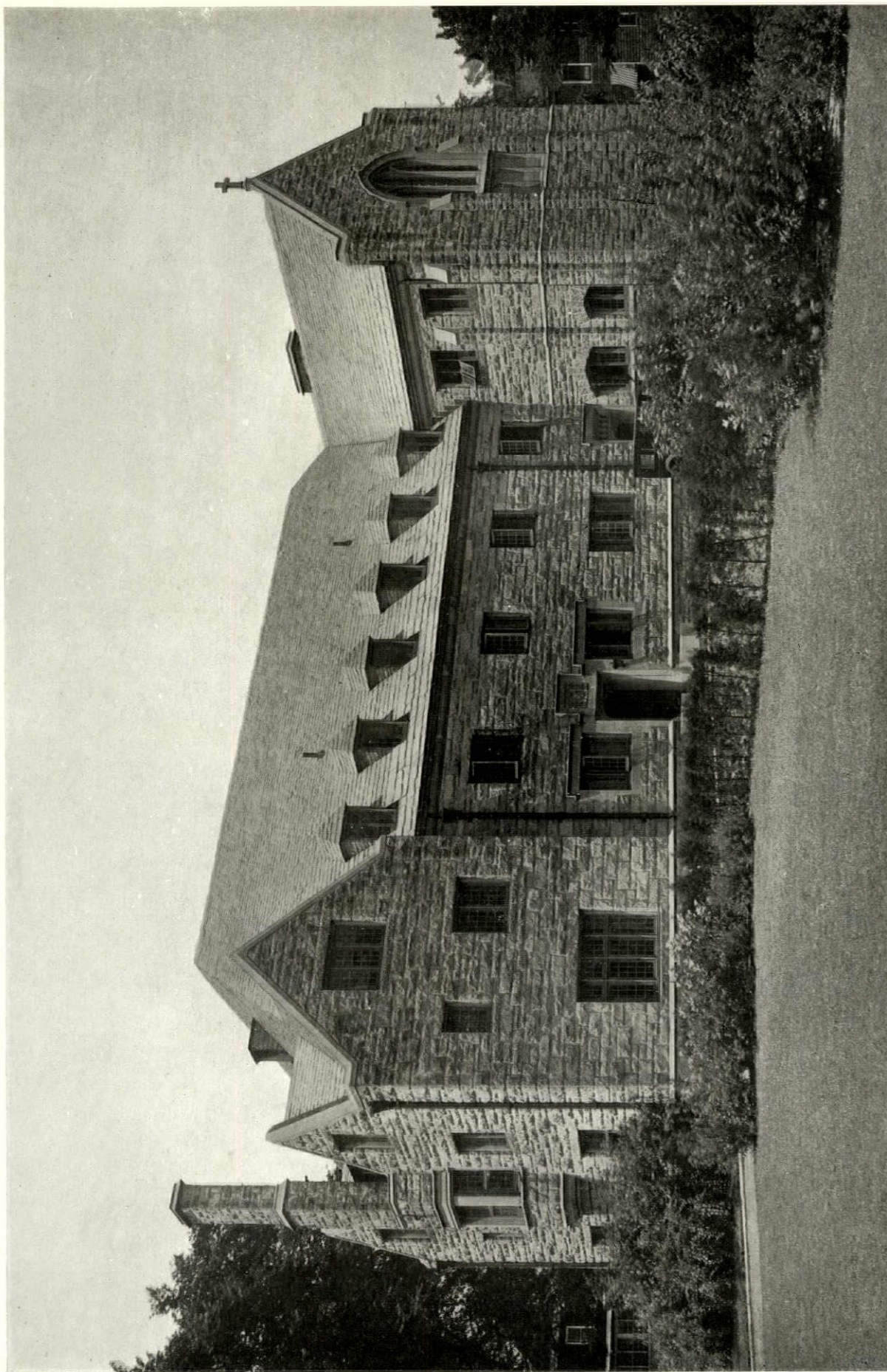
INTERIOR LOOKING TOWARD PULPIT



LONGITUDINAL SECTION

CHAPEL AT COLGATE UNIVERSITY, HAMILTON, N. Y.  
HARDING & SEAVER, ARCHITECTS





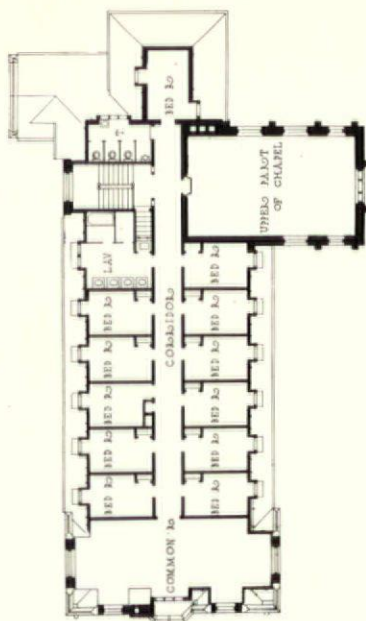
*Photos by John Wallace Gillies*

GENERAL EXTERIOR VIEW

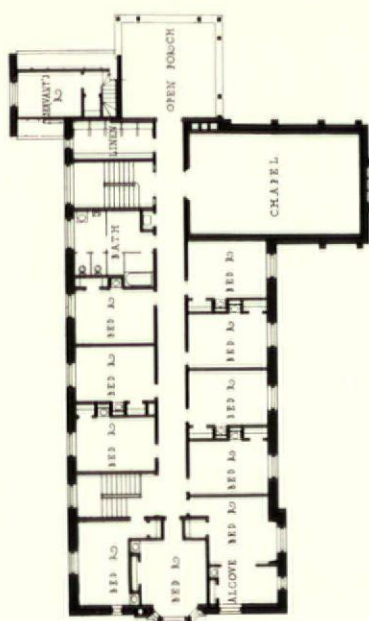
ST CECILIA'S PRIORY, ENGLEWOOD, N. J.

RAPHAEL HUME, ARCHITECT

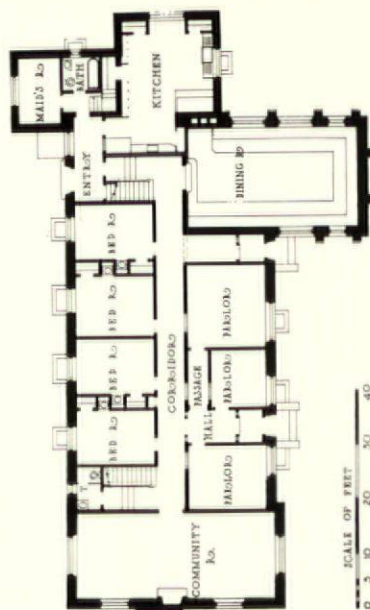




THIRD FLOOR PLAN

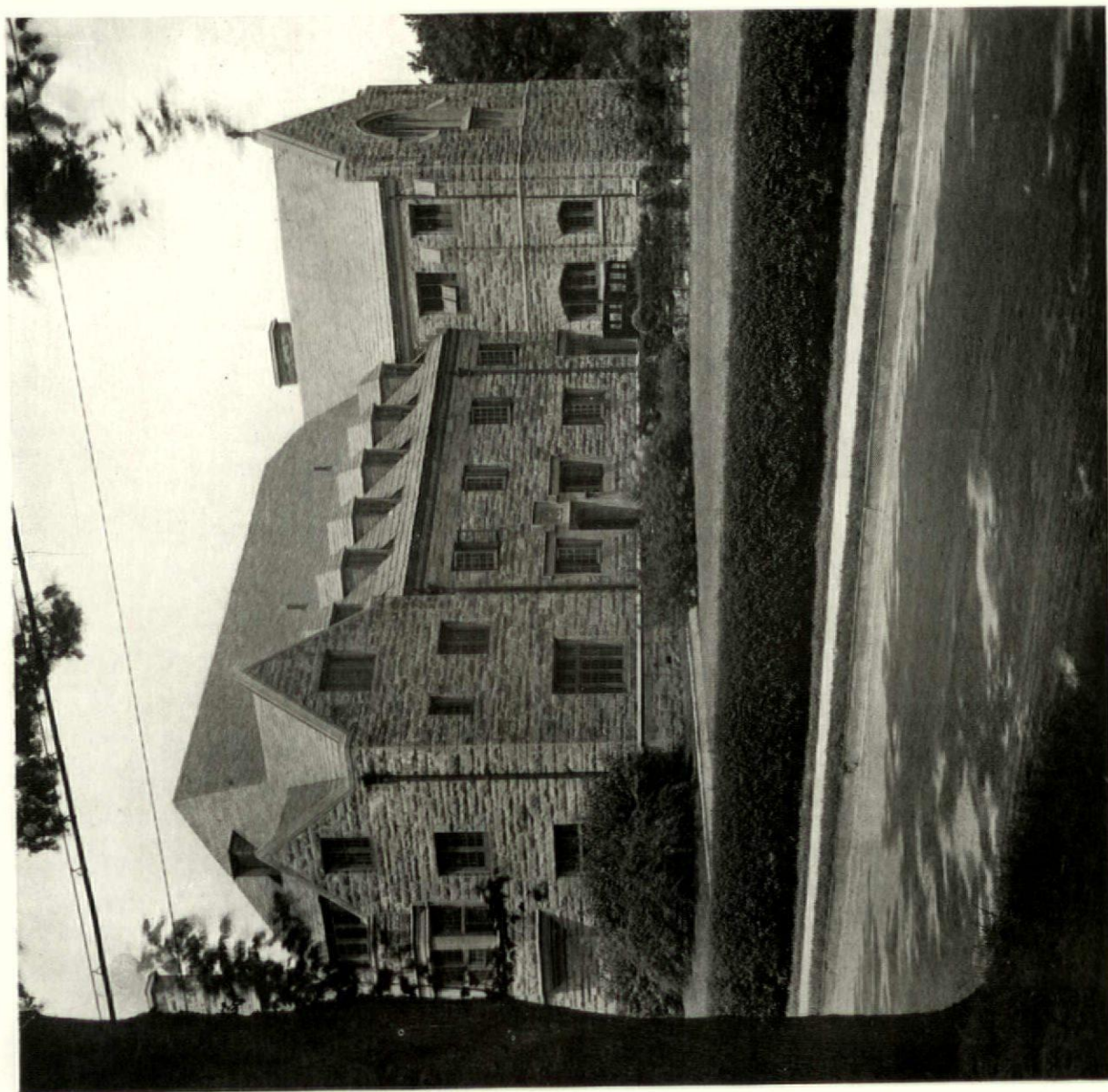


SECOND FLOOR PLAN



FIRST FLOOR PLAN

SCALE OF FEET  
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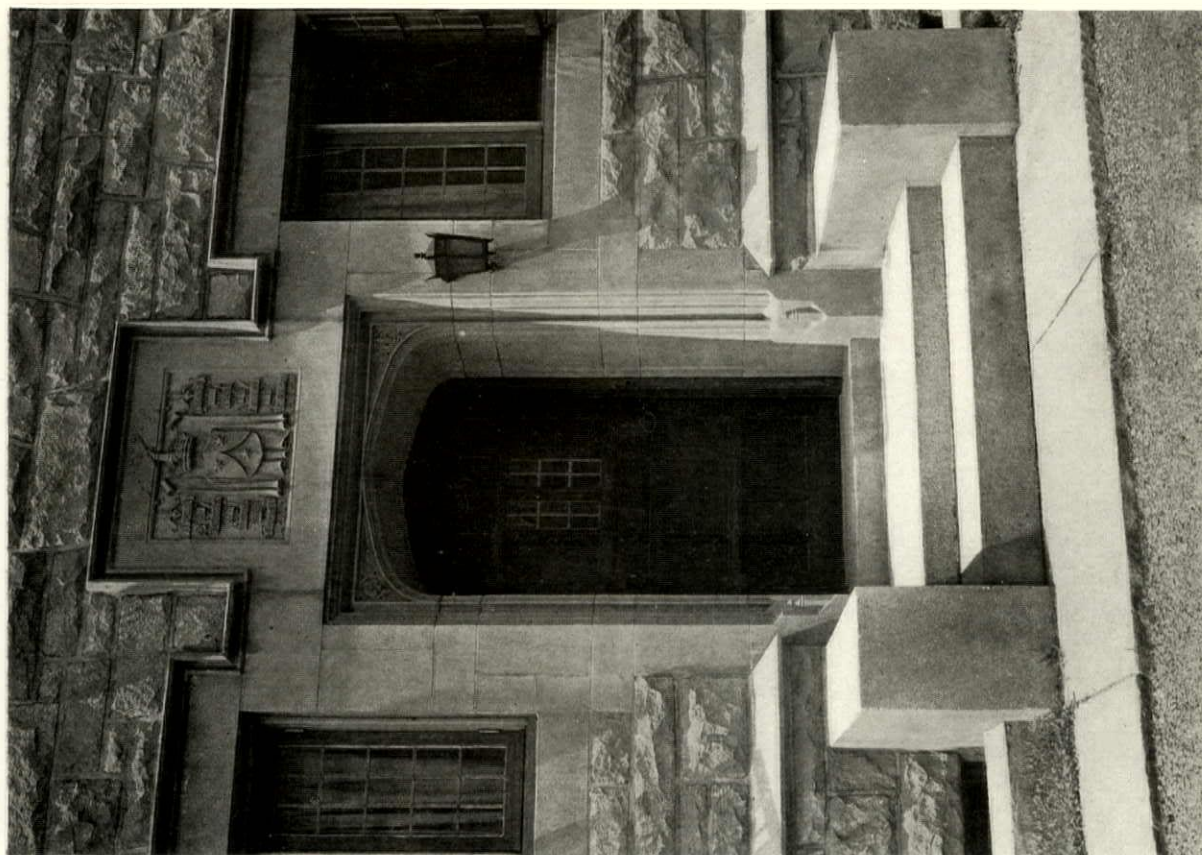


VIEW OF ENTRANCE SIDE

ST. CECILIA'S PRIORY, ENGLEWOOD, N. J.

RAPHAEL HUME, ARCHITECT





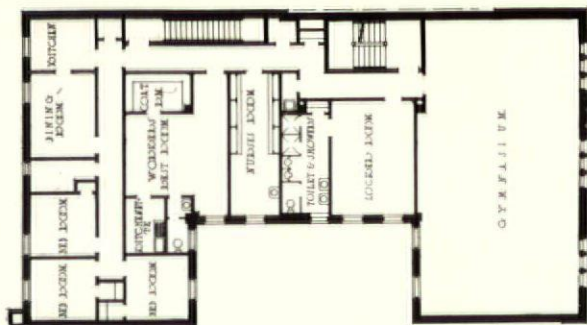
DETAIL OF ENTRANCE



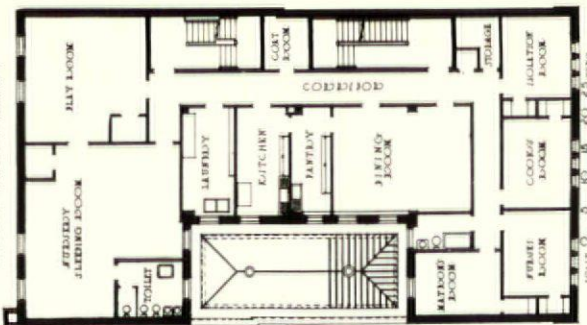
DETAIL OF BAY AND GABLE

ST. CECILIA'S PRIORY, ENGLEWOOD, N. J.  
RAPHAEL HUME, ARCHITECT

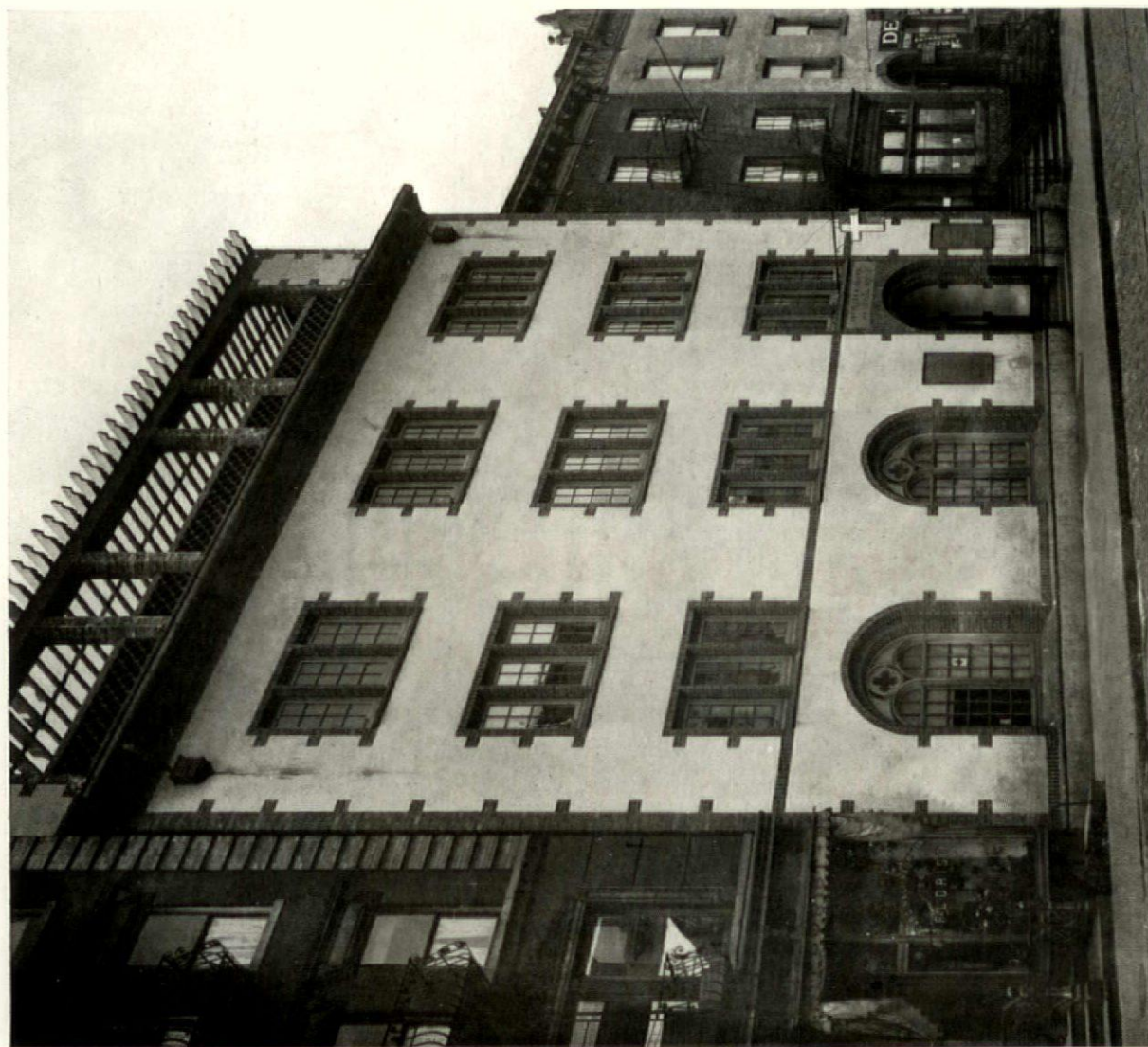




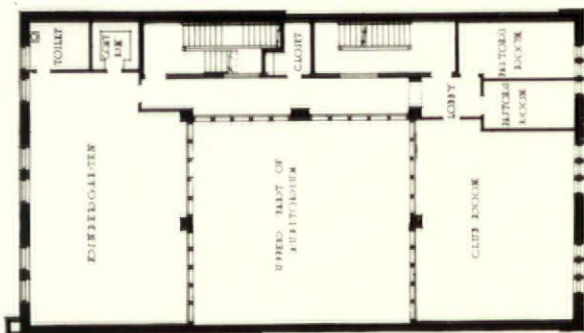
THIRD FLOOR PLAN



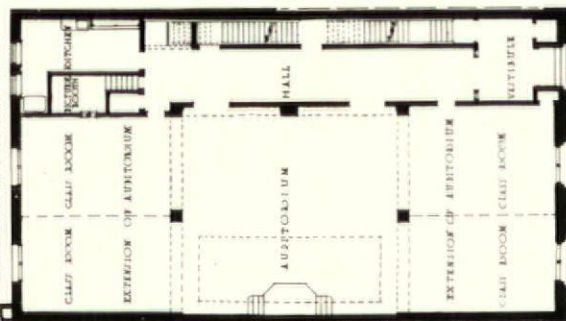
SECOND FLOOR PLAN



GENERAL VIEW OF FACADE  
BETHLEHEM CHAPEL AND MEMORIAL HOUSE, BLEEKER STREET, NEW YORK  
GEORGE B. POST & SONS, ARCHITECTS



MEZZANINE FLOOR PLAN



FIRST FLOOR PLAN



# A New York Settlement House

## BETHLEHEM CHAPEL AND MEMORIAL HOUSE

GEORGE B. POST & SONS, ARCHITECTS

THERE are few types of social service buildings which present opportunity for a more hopeful development than the structures which are devoted to settlement work of different kinds or to such closely allied forms of effort as community houses or day nurseries. In many instances such institutions are placed in densely populated city districts where the people whom it is hoped to reach are of foreign extraction, and a happy inspiration has led to the use, in planning the buildings for such purposes, of the types of architecture and decoration to which these people have been accustomed in their homes across the sea. It is not difficult to realize the feeling of a man or woman of the peasant class, used to the order and symmetry of the architecture of European countries, to find amid the miles of dreary streets of an American city a building which by reason of its appearance suggests some old quarter of a city in the homeland. The psychological effect is tremendous.

The Italian styles, with their advantages for the development of the facades of buildings facing city streets, offer many opportunities when a structure is to be erected as the center of social work of any kind, and the utmost in the way of results may be had at the minimum of cost by the use of very simple materials in which the Italian styles may be successfully developed. A wise choice would indicate the use of this type of building, particularly when it might possess an added value for the purposes which the building is intended to serve.

Such were the conditions presented in the planning of the Bethlehem Chapel and Memorial House, on Bleeker street, New York. This is at the center of the Italian quarter below Washington square, where a foreign population has now completely filled a district which was occupied a few decades ago by people of English or French descent. Here in block after block of dismal tenements the Italian people are housed, with here and there a group of dwellings recently remodeled by real estate speculators to meet the urgent demand for homes and adapted to the needs of families of a social status quite different from that of the characteristic population.

The problem was to plan a building which by its appearance would attract and impress favorably the people for whose use it was meant, and to provide quarters for varied activities—a day nursery, many clubs and other social organizations—and also rooms for religious services, together with living quarters for a staff of residents and rest rooms and kitchen facilities for other workers who live elsewhere. The building includes provision for all this, so planned that many activities may be carried on without interference, each complete in itself.

To the casual visitor walking along Bleeker

street, the Memorial House with its bright colored facade and simple detail contrasts sharply with the unrelenting hardness of the neighboring buildings. There is a suggestion of ecclesiastical influence of Italian origin in the minor details of the street front, particularly in the muntins of the windows and the playfulness of a tile balustrade and a pergola surmounting the upper story. The stucco of the walls, of a pale pink displaying the trowel marks of the mason, has a warmth and quality of texture that is decidedly pleasing.

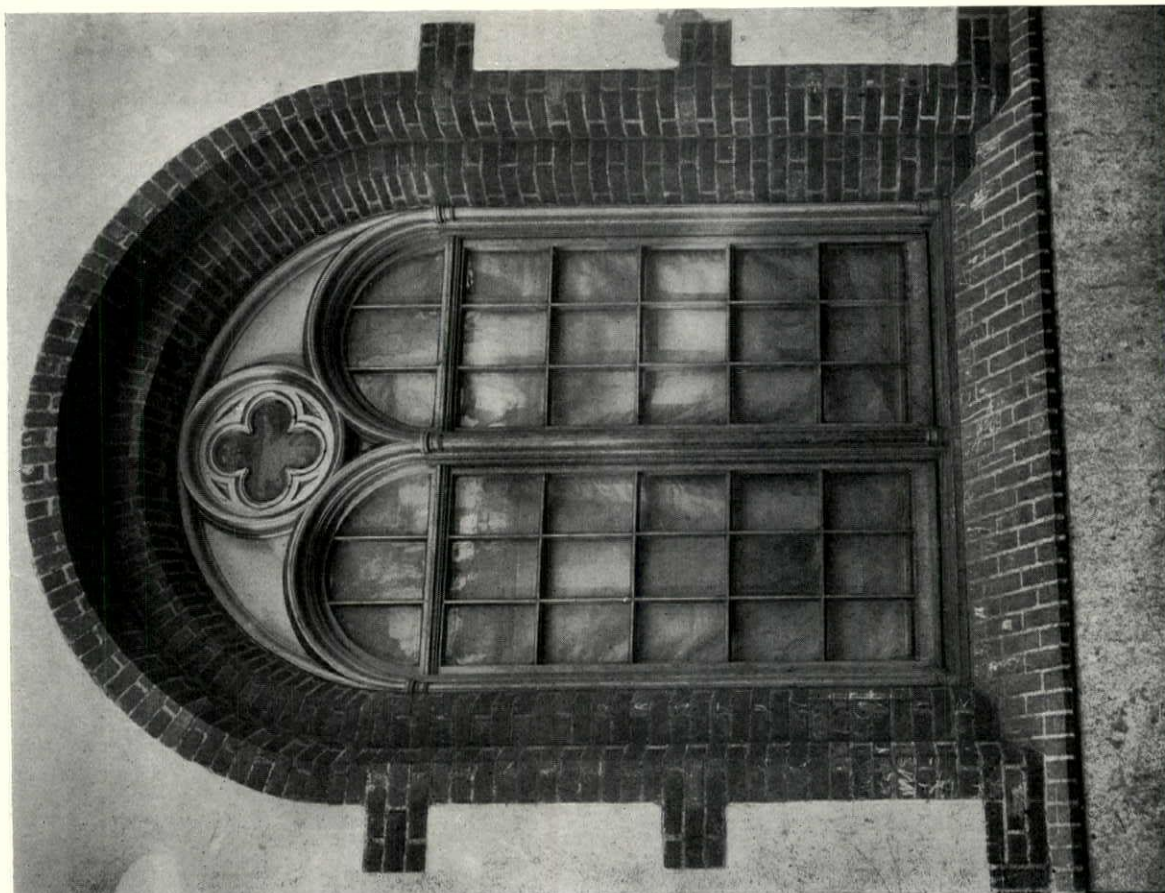
Inside, the building has been laid out with a view to affording highly efficient service. From the very simple vestibule the visitor enters the main or chapel floor, with one large room running the full depth of the plot, providing seating capacity for about 300. The major or central area of this room runs through two stories, either end being divided by a mezzanine or gallery. Beneath these galleries, on the same level with the main assembly room, provision is made for special meetings or classes, collapsible folding doors providing for isolation of the groups using these classrooms.

On the second floor is a nursery department, including a sleeping room 25 x 27 in size and a playroom 20 x 20, besides a diminutive toilet and bath, all to accommodate about 40 babies and small children. On the same floor are the nursery mother's office, a dining room for servants, a dining room for the little folks, a diet kitchen, laundry and three sleeping rooms for the staff. Most interesting of the rooms, from the viewpoint of service, is the dormitory or nursery for the infants who spend their days under the care of the mission mother. An experience not soon forgotten is a visit to the nursery on a weekday afternoon. In the twilight of the darkened room 30 or 40 tiny recumbent forms, rolled in blankets, slumber soundly on slatted cots.

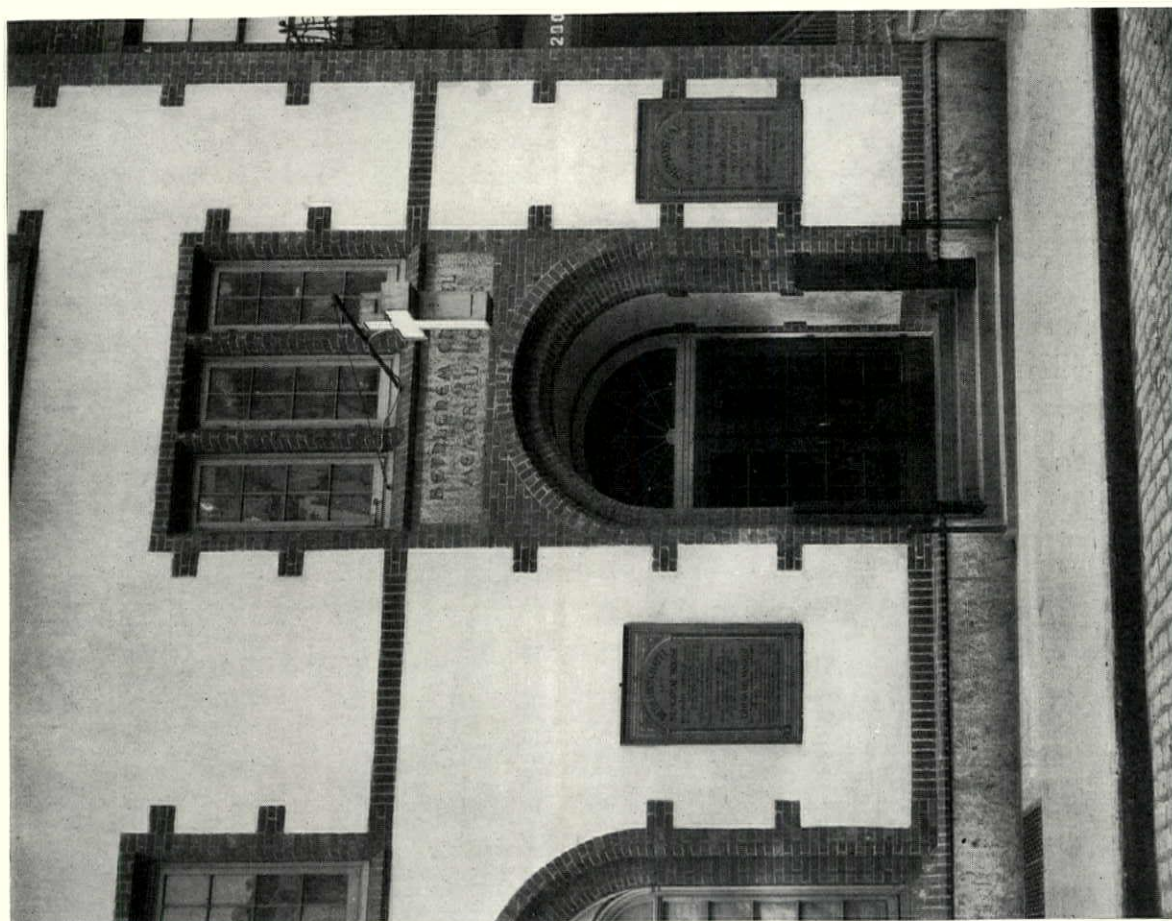
The Chapel and Memorial House are designed to serve youths and girls of the neighborhood as well as the children of nursery age and grown-ups. With this in view, a gymnasium has been incorporated in the plans, located on the third floor, 26 x 40 in size. The remaining area on the same floor is given over to bedrooms for the employes and nurses and the superintendent's apartment.

The important lesson which this brief outline of the activities and workings of a modern social center conveys to the architect generally is the desirability of a broadening of viewpoint regarding buildings for modern social service requirements. He is hardly justified in expecting to profit by the opportunities which are rapidly coming forward in this field, unless he familiarizes himself with the developing science and sociology of welfare work, dealing with people in humble circumstances.





DETAIL OF FIRST STORY WINDOW



DETAIL OF ENTRANCE

BETHLEHEM CHAPEL AND MEMORIAL HOUSE, BLEEKER STREET, NEW YORK

GEORGE B. POST &amp; SONS, ARCHITECTS



## Plate Description

**DETROIT GOLF CLUB, DETROIT.** Plates 17-20. The opportunity for giving architectural character and expression which the designing and planning of a large country club presents has been made the most of by Albert Kahn, the architect of this large and rambling building. Its purpose demands that it afford every convenience and comfort for those interested in golf and the other out of door sports to which it is devoted, and also that it have spacious verandas so situated that at least one be shaded during the entire day, and several overlooking the golf links themselves. The floor plans show that every provision has been made for all this and also for affording to members and guests the utmost of service in the way of living rooms, reading and sitting rooms, grill and dining rooms.

The exterior walls and the chimneys of the building are of brick laid in a simple but tasteful bond, and shingles have been used for roofs and for covering the surfaces of certain gables. A large part of the attractiveness of the club is due to the care with which laying out the grounds and planting of shrubbery have been done.

**FARM BUILDINGS OF WALTER DOUGLAS, ESQ., DOBBS FERRY, N. Y.** Plates 21-23. During the past few years what might be called the architectural value of farm buildings of different kinds has been realized as never before. Separated and scattered over an estate they generally constitute a liability rather than an asset, but when combined into one structure or into a group of closely related buildings they acquire an importance which entitles them to considerable attention on the part of architects.

Such is the result in the case of the buildings, of which Alfred Hopkins is architect, shown upon these plates. All the departments necessary upon a large estate are so grouped or combined that each fulfills its appointed function while adding its share to the importance of the group as a whole. The walls of the buildings are of stone, whitewashed, and the low, spreading roofs which add to the character of the group are covered with slate.

**SERVICE BUILDING, ESTATE OF WILLIAM V. KELLEY, ESQ., LAKE FOREST, ILL.** Plates 24, 25. The tendency, in planning modern country estates, to group the auxiliary or service buildings and to clothe them with a garb which possesses distinct architectural character is also illustrated here, for in this structure, of which Howard Shaw is architect, are combined stable, cow house, silo, water tank, hay loft, garage and three separate and distinct sets of living quarters for employees.

Use of stucco for outer walls gives the structure a close relationship with other buildings upon the estate, and the necessity of there being a silo and a water tank probably suggested the placing of these two adjuncts close together and screening them with

the graceful brick structure, which with its horizontal brick courses at intervals has much the appearance of a campanile from northern Italy.

**CHAPEL AT COLGATE UNIVERSITY, HAMILTON, N. Y.** Plates 26-28. Use as building material of stone, such as was used for some of the earlier university buildings, ties this newer structure in with its surroundings and makes for the harmony and unity which add so greatly to the dignity of a group of collegiate buildings. Rough stone has been used for the greater part of the building; the employment of cut stone of another kind for trimmings gives the variety of texture and color which walls of stone sometimes lack, and the gracefully designed belfry or cupola is of wood painted white. The entire exterior suggests the early meeting houses of the Dutch settlers in certain parts of New Jersey and New York.

True to the early meeting house prototype, the interior has the customary narrow gallery along each side, suggested from without by the arrangement of the windows, and a deeper gallery across the west end of the church. The floor of the auditorium proper slopes slightly toward the pulpit end. Interior trim is of wood painted white with mahogany used for stair rails and for the trim of pews. The fluted wooden pilasters support a cornice of plaster. The architects, Harding & Seaver, have been successful in imparting to the building an architectural consistency which is rare among chapels of collegiate institutions.

**ST. CECILIA'S PRIORY, ENGLEWOOD, N. J.** Plates 29-31. The excellent design of this structure, of which Raphael Hume is architect, suggests at once its use as a convent for a community of women. The stone walls gain in dignity and in solidity of appearance by the use of coped gables, the judicious grouping of openings such as doors and windows wherever such grouping was possible, and by the use of broad expanses of high pitched, slate covered roof not unduly broken up by the long row of dormer windows necessary for lighting the bedrooms of the upper story of the building.

Floor plans show an excellent arrangement which is in accord with traditions which for centuries have governed the planning of monastic buildings. The parlors or reception rooms to which the outside world has access are cut off from the "cloister" or quarters of the community; the arrangement of the refectory or dining room is what would be expected in a convent, while the placing of the chapel in its present position makes possible the fulfilling of the rule (sometimes ignored) that no rooms of any kind be placed over the chapel. The dignity of the building is enhanced by being placed endwise to the street and by the excellent use of hedges and other shrubbery.



# EDITORIAL COMMENT

## WILL ARCHITECTS GRASP PRESENT OPPORTUNITY?

STATISTICS of the building industry indicate that 1923 will see a greater volume of building construction than any year previously recorded. This unusual program of building offers a singular opportunity for architects because statistics also indicate that a large proportion of contemplated building will be of important structures ordinarily involving due architectural consideration. The opportunity exists to increase greatly the number of worthy architectural buildings in this country and to make this period of large building one of steady advancement in the standards of architectural design. The fulfillment of this depends upon the architectural profession, and while there are great numbers of talented men in the profession and new lights always coming forward,—an ample group to meet the demand for architects,—there is reason to ask if the profession will accomplish all that is possible.

The architectural profession of all the professions can generally be said to represent the most highly developed professional viewpoint; architects individually and collectively are first and always interested in the advancement of architecture—an art; the advancement of their profession as an economic factor and a means of livelihood is entirely secondary. This is most praiseworthy, yet as modern civilization is constituted the progress of architecture cannot be secured without first developing the profession so that opportunities can be fully grasped. It is because of our conviction that the profession fails in this latter respect we question its ability to accomplish all possible in the era just ahead.

The public that builds is not learned in architecture; it is not able to appreciate the sometimes rather fine distinctions that separate good from bad; it distinguishes one architect from another solely by reputation, not by means of a critical appraisal of their respective work. Architecture to the public is building (when it is not thought of as mere decoration and an extravagant luxury); the architect is a man to whom the planning and execution of building is entrusted. Unfortunately for the profession and for architecture too, architects often fail to realize the manner in which the public views them. They have thus made an opportunity for the functioning of another group which in the main offers to perform all that the architect does, yet which for definite business reasons elects to call its work engineering and not architecture. Is it not understandable, therefore, that in many instances there should be confusion in the minds of those projecting a building over the terms "architect" and "engineer," and that often the engineer is selected

for the work particularly because he has dwelt on the things he *won't* do—the very things that tradition says the architect *will* do?

Some view this incursion of the engineer into the field of building as a factor undermining the practice of architecture; we have ourselves called attention to it more than once in these pages, yet we are inclined to see some good in it for the profession, if the presence of the engineer will serve to emphasize the need of architects' stressing and improving those points of their service that are economic in nature. The engineer will never be able to display the creative ability of the architect, but he has sensed the architect's weak points and has unquestionably won a place for himself in the business world because he has supplied service where the architect is deficient. Let this be considered a service to the architectural profession as well; the weak points have been singled out, and there remains nothing to do but correct them and profit by the example the engineers have set.

The engineer has developed another feature in his service to the building public—that of salesmanship. This is a very important factor in modern business, and from its rather crude beginning it has acquired a certain unwritten code of ethics which places it now in a near-professional light. Architects have held aloof from it because they view it largely as self-advertising, yet in order to execute their commissions they often unconsciously employ salesmanship which is nothing more than the ability to persuade others to accept one's views.

In the sense of an aid to securing commissions it should be only dignified publicity. There is nothing unethical in bringing one's work and one's ability to give service to the attention of one contemplating building and asking consideration on its merit. It is not incumbent on the architect to point out the merit of his work; a suggestion that inquiries be made of past clients is entirely sufficient. In commercial and investment building, and this constitutes a very large portion of the architect's sphere of operation, such a direct procedure is understood and respected, whereas the theory that the buyer will search out the seller, which is entertained by many architects, is given little credence.

Group effort of architects through well studied publicity should be made to counteract the prejudice that many people hold in regard to extravagance, inefficiency and lack of appreciation of business problems on the part of architects. Similarly, the functions of the architect should be properly explained to the public. It should always be kept in mind that publicity is not sought for the profession but for the utilization of architects in meeting the needs of the building public.

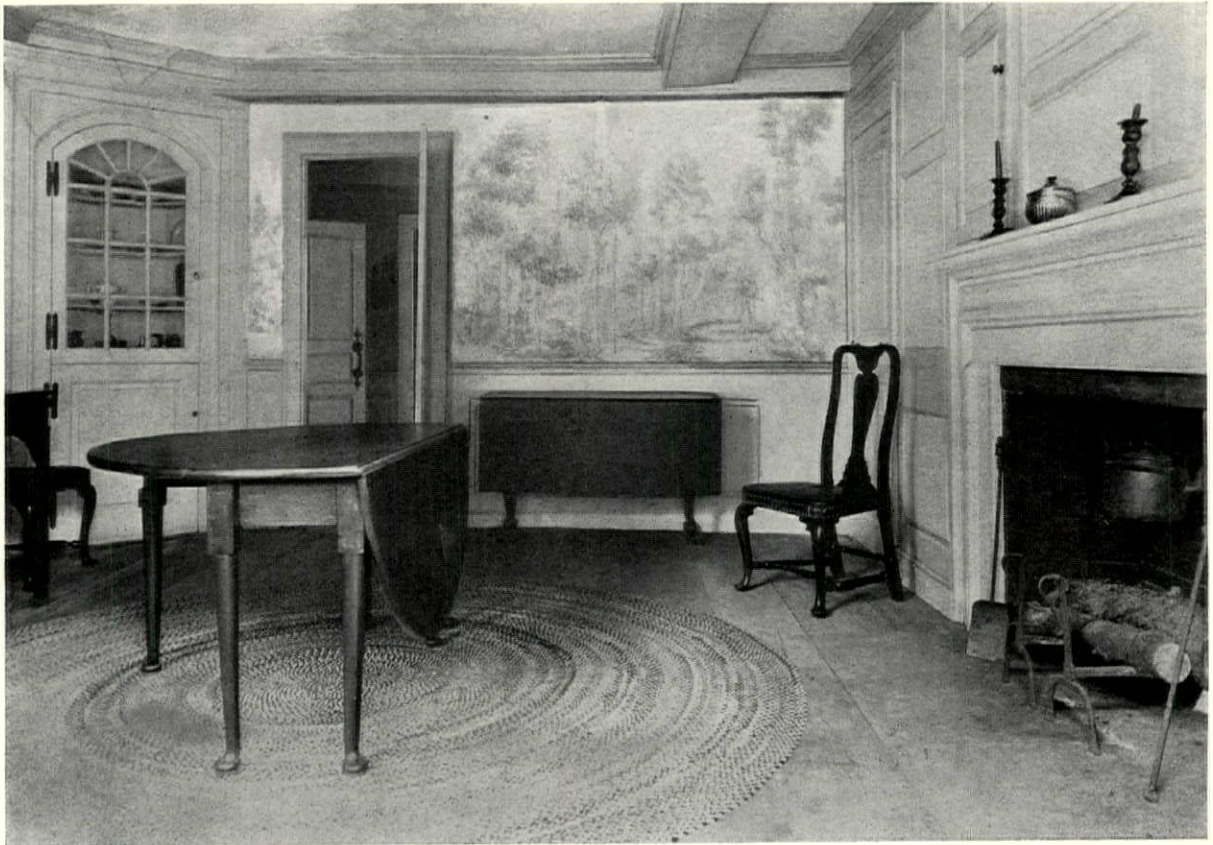


# DECORATION *and* FURNITURE



A DEPARTMENT  
DEVOTED TO THE VARIED  
PROFESSIONAL & DESIGN INTERESTS  
WITH SPECIAL REFERENCE TO  
AVAILABLE MATERIALS





EARLY EIGHTEENTH CENTURY AMERICAN INTERIOR WITH TYPICAL FURNISHINGS



MID-SEVENTEENTH CENTURY ROOM, ROBERT CHASE HOUSE, NEWBURYPORT, MASS.



# Eighteenth Century American Furniture and Craftsmanship

By EDWIN J. HIPKISS

Keeper, Department of Western Art, Museum of Fine Arts, Boston

Drawings by the Author

THE eighteenth century seems to have had diversity of taste within a unity of style. The architecture of our Atlantic seaboard has been rightly called American renaissance, for it was the last small bloom from roots of Italian origin after four centuries of transplanting and adaptation. The sixteenth century palace of Rome had become the White-Pingree house of Salem.

An accepted style, freely expressed, from Maine to South Carolina, held in check the pursuit of passing vagaries and produced good works, modest enough, but appropriate, diverse and modern in their time. Strangely enough, the simple furniture of native woods, walnut, maple, beech, birch, applewood and pine, had the directness, simplicity and vigorous spirit of sixteenth century Italy in some measure. Most of it had architectonic quality. The men of the eighteenth century obviously held to the idea that, "you cannot make a purse out of a —," or rather, you can best make a purse after a good model. And do we not realize it, too, if we honor past achievement? "So shall we bring out of our treasuries new things and old." Sir Joshua Reynolds said to his students at the Royal Academy: "The more extensive your acquaintance is with the works of those who have excelled, the more extensive will be your power of invention—and what may appear still more like a paradox, *the more original will be your conceptions.*"

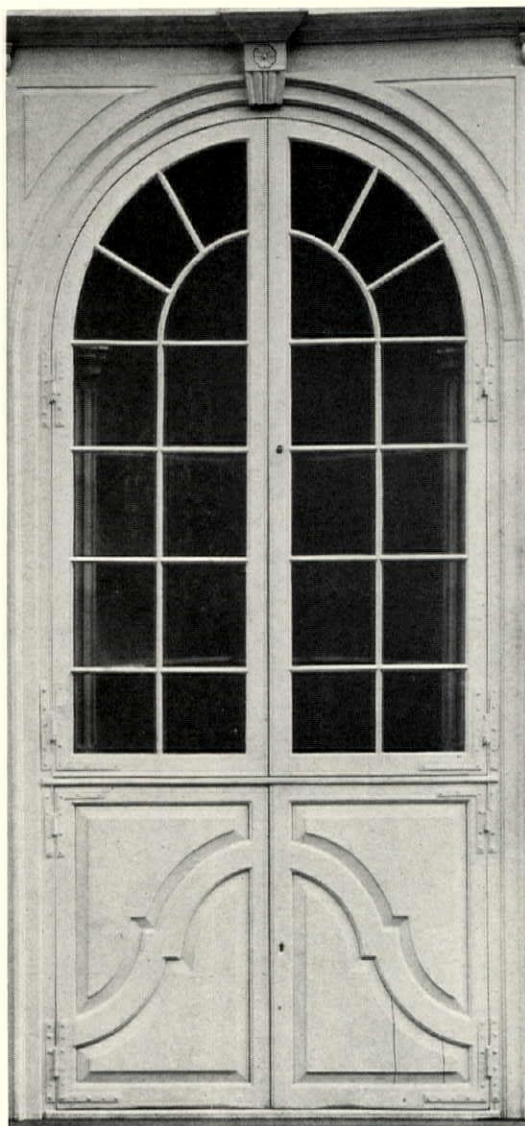
That had to do with painting, a "fine art," but other arts have their fine traditions. A group of Frenchmen skilled in a racial art, combined their efforts, with crayon, soldering iron, nippers, bits of lead and colored glass, and made one of the glories of France,—the stained glass windows of Chartres. The masters of the Italian renaissance did not stand aloof when furniture came along as part of the year's work.

In the eighteenth century the worker in wood

had an equipment of tools now seldom seen; he had in his hands what amounted to a keyboard of forms—it was a set of moulding planes. The forms they cut were based on the prevailing idea of style, and the planes were made in graduated sizes, thus making almost endless combinations possible, always *in style*. An architrave from the Wentworth-Gardner house will serve to illustrate their application. Proportions and details were first decided upon as a part of the whole work, then moulding planes were selected which would do their part in the design. The same principle was applied to an elaborate cornice. Design and execution were so closely related and the same practice was so widespread, that an impossible form like that shown in the accompanying profile drawing could hardly have happened—or even have been tolerated. This specimen was taken at random from a current catalog of what passes as "colonial" finish. It is said to be "kept in stock," but the land is deluged with it.

What were the old methods of finishing? A cabinet maker of New York recently had this to say after an experience of 28 years in the restoration of old furniture: "In the eighteenth century fine furniture was treated in one of two ways. It was either made without finish and was cleaned with water, soap and sand, or it was given a quickly absorbed coat of shellac and was then waxed over again and again. Mahogany and maple were never polished; the wood received its soft sheen through oft-repeated oiling and rubbing." The writer uses an old recipe calling for double boiled linseed oil, turpentine and vinegar in equal parts. It is rubbed on with vigor and rubbed off with care.

Maple is a wood of fine qualities, and furniture of deep, rich tones, suggesting the brown tones of old leather bindings, is coming into a wider appreciation. The old color can be approximated by proper

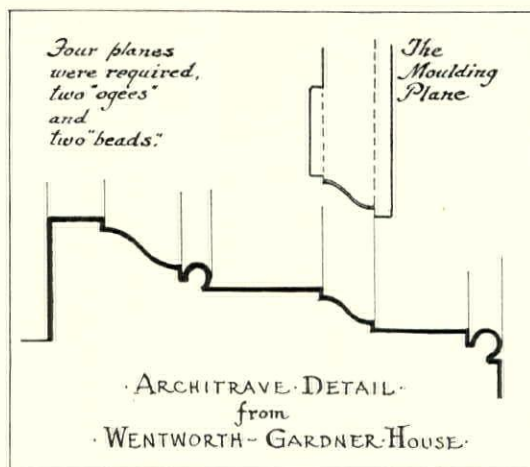


Eighteenth Century Cupboard in Metropolitan Museum of Art

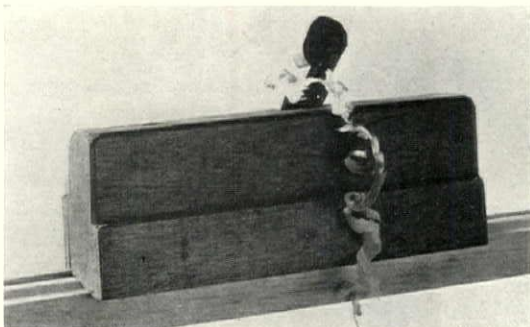


finishing, but of course time favors the old pieces in their beauty of surface. Many of us come to the point where we must aim for some consistent scheme of furnishings, not for a client of great wealth but for a scheme for our own needs, and one "within the appropriation." Many of us have studied the works of sixteenth century Italy or eighteenth century France with keen interest and pleasure, to find in the end that they are magnificent and that we are not princes. Early American chests, tables, chairs, beds, dressers, cupboards, stools and benches made of maple, walnut or even pine offer types that can be charming in form and color. If they happen also to be appropriate, who can have more?

The native Windsor chair is much finer in de-

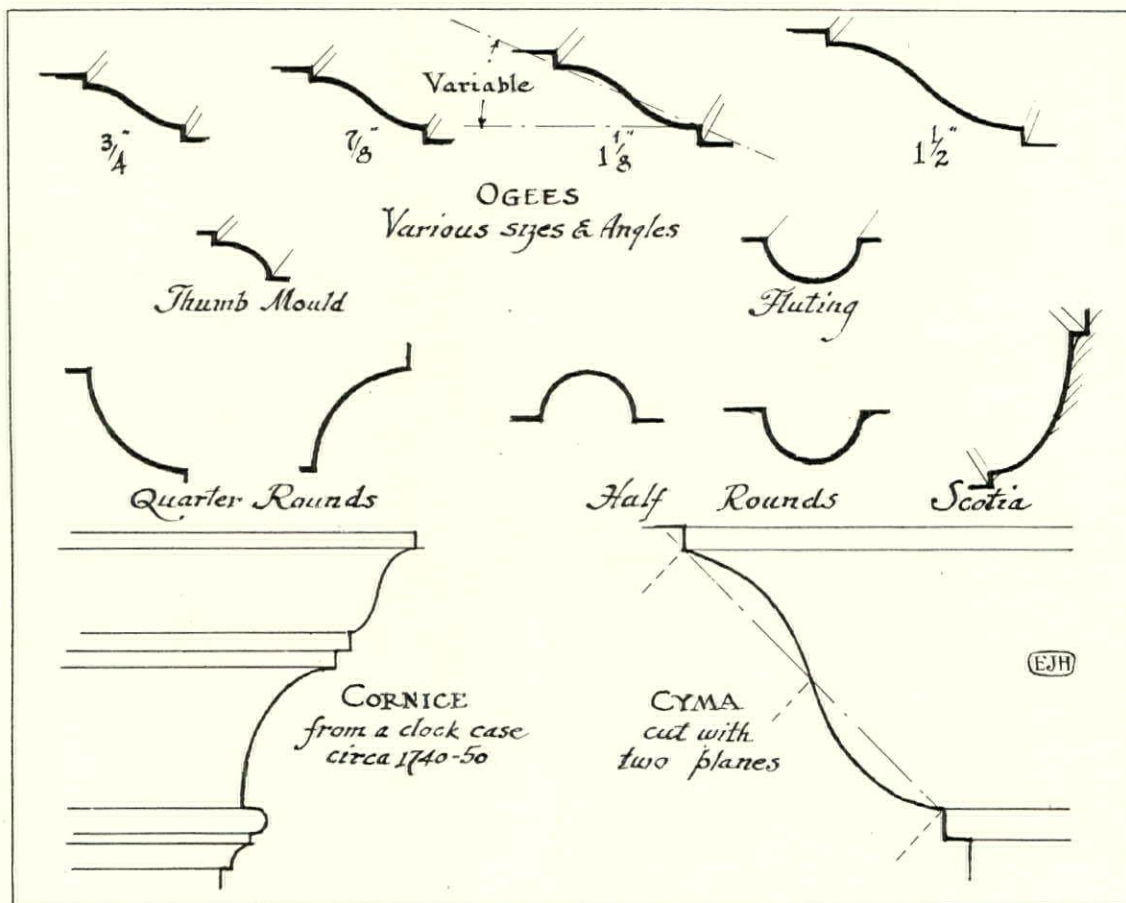


Typical Interior Architrave Detail



Early American Moulding Plane

sign and quality than its English prototype. A good eighteenth century Windsor has many interesting points and well illustrates the ways of the skilled workman who takes pains, and pleasure, in making things come right. It seems strange at first thought that these chairs should have three kinds of wood in their makeup. They were maple, pine, and hickory or oak, all pulled together in tone by the use of oil or painted in one color. They have lightness with strength and a sprung-bow-like quality in the backs worth analyzing. The spindles and bows were of hickory or oak, and the spindles were joined to the bows with fox-tail wedges. The seat was of one piece of white pine, light though sufficiently thick to allow a "saddle" seat for comfort. The legs and



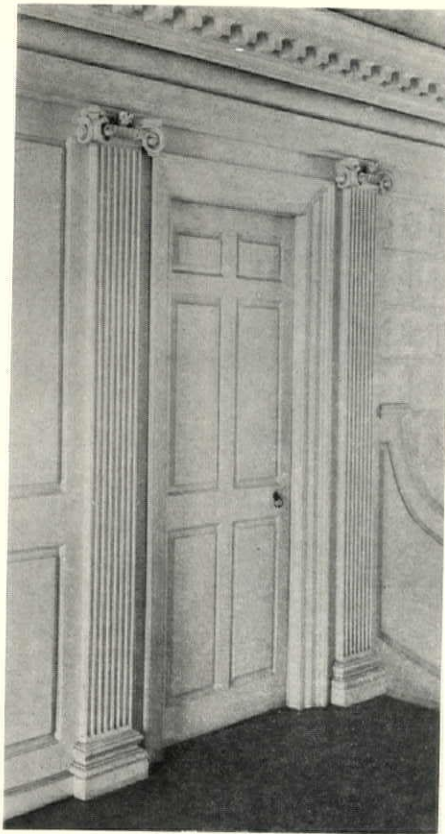
Moulding Forms of the Mid-Eighteenth Century in America



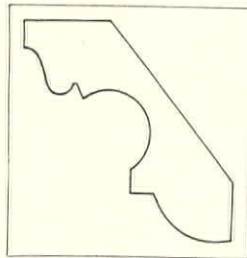
stretchers were usually of hard maple, wear-resistant but well adapted to turning in the lathe. All joints were wedged.

The sketch given here shows typical door panel construction. There was economy in parts; mortised and tenoned joints; no metal, and the panel was held between rails and stiles free to expand laterally, or "with the grain." Old doors of pine are still in service after 150 years of use. The doors in the Wentworth-Gardner house will serve as few among many examples; they are straight and true and but  $1\frac{1}{8}$  inches thick. The same reasoned construction was used in furniture with many variations.

*Some Experiments, or Theory Plus Practice.* The armchair in the style of Charles II, shown in the illustration, is nothing more than a copy made "for the fun of it." Three local workmen, a carver, a turner and a joiner, worked with the owner and seemed to enjoy the opportunity of doing a special piece of work. Their charges and the cost of the wood amounted to little enough. The wood, incidentally, is old walnut and came from a house formerly on Beacon Hill, Boston. The only conclusion reached as a result of this experiment, and several others, is that a lively interest on the



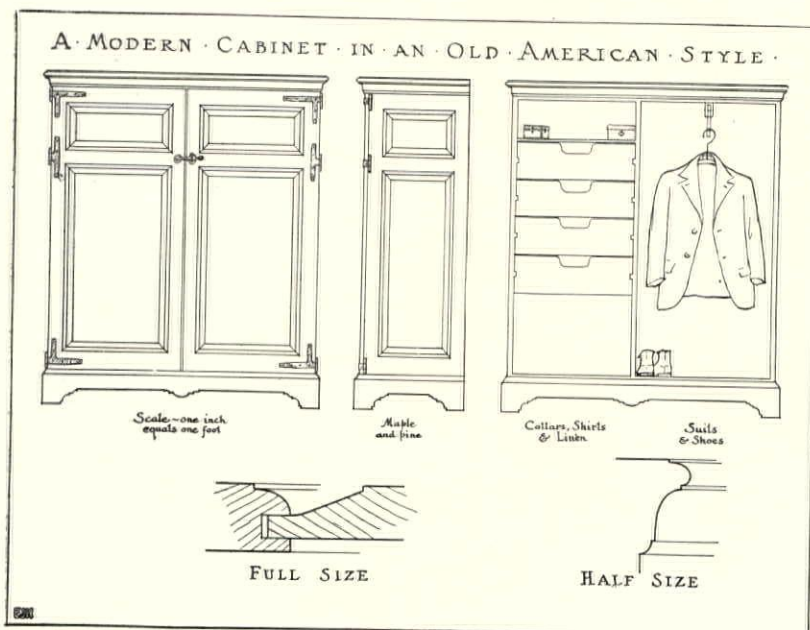
Second Floor Hall Door  
Wentworth-Gardner House, Portsmouth, N. H.



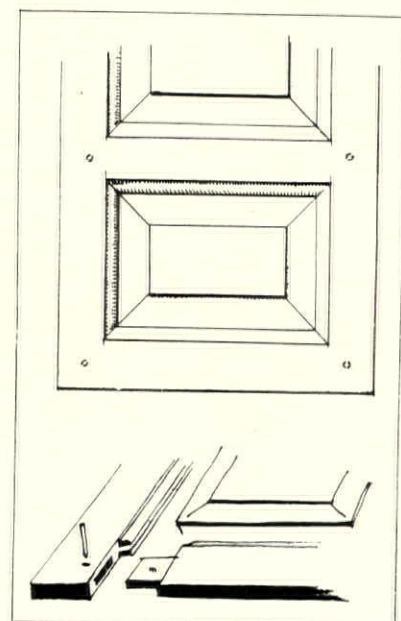
Modern Stock "Colonial" Moulding

part of skilled workmen does exist and should be encouraged. The chair is plainly modern and will mislead no one who knows old furniture. The work was done without thought of being either "artistic" or artful. The tavern table was designed with elements of several old tables in mind and was made by two local workmen. The frame is of maple and the top is of pine in one piece with maple cleats on the ends to protect the end wood. It was turned over to its owner "in the white," and was then given a wash of chemical solution, to obtain the brown tone desired, followed by one of vinegar to neutralize the acid. Oil finish was rubbed in finally. It approaches the work of the eighteenth century in surface and color, but it is frankly modern.

The drawing of a wardrobe cabinet is merely an attempt at solving a modern problem in an old manner. It was designed to go in a certain room and to take its place with some old pieces. The intention is to paint it sage green with mouldings in low toned vermilion; all surfaces are to be rubbed with pumice and oil. Variations and improvements will suggest themselves to other designers at once, and the more free practitioners there are, the greater chance



Details of Cabinet in Early American Style



Details of Colonial Door



for varied interest and perfection. We sometimes are told, in tones of resignation, that we live in an industrial, a manufacturing age, as though fine achievement in the crafts were at an end—a closed book. We need only concern ourselves about standards, and the right means will take care of itself. Fine works get done when there is eagerness for fine work.

What about machinery? May we not look to machinery hopefully? Machines have always been used; the lathe, the drill and the potter's wheel are ancient examples. The artisan has no quarrel with a helpful machine; he has a legitimate quarrel with a machine as a master, and he has a quarrel with the methods of mechanical production. The mechanical ideal sets going a body of men under a military regime (on a forced march usually) in a drive on minimum cost and maximum quantity. The workers march in a treadmill of part operations endlessly repeated.

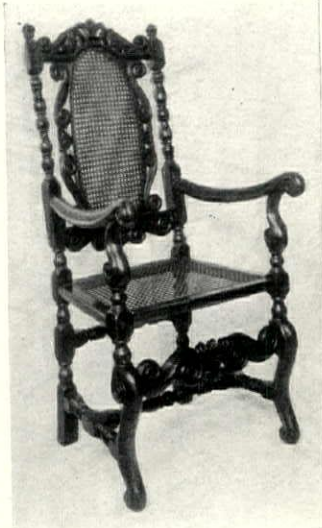
During the nineteenth century mechanical production almost wiped out many worthy and needed outlets of human skill. And we now hear much of the use of museum examples of craftsmanship in domestic art for the "beautifying" of manufactures. That manufacture should have a semblance of art is no doubt desirable, but that is only a compromise. Artisan-ship at its best is personal;



Early American Painted Chest



Modern Reproductions of Early American Furniture



*The illustrations above and below show modern pieces of furniture that have been made by the collaboration of local workmen under the guidance of the author. They observe the niceties of design, craftsmanship and finish that characterize original pieces.*

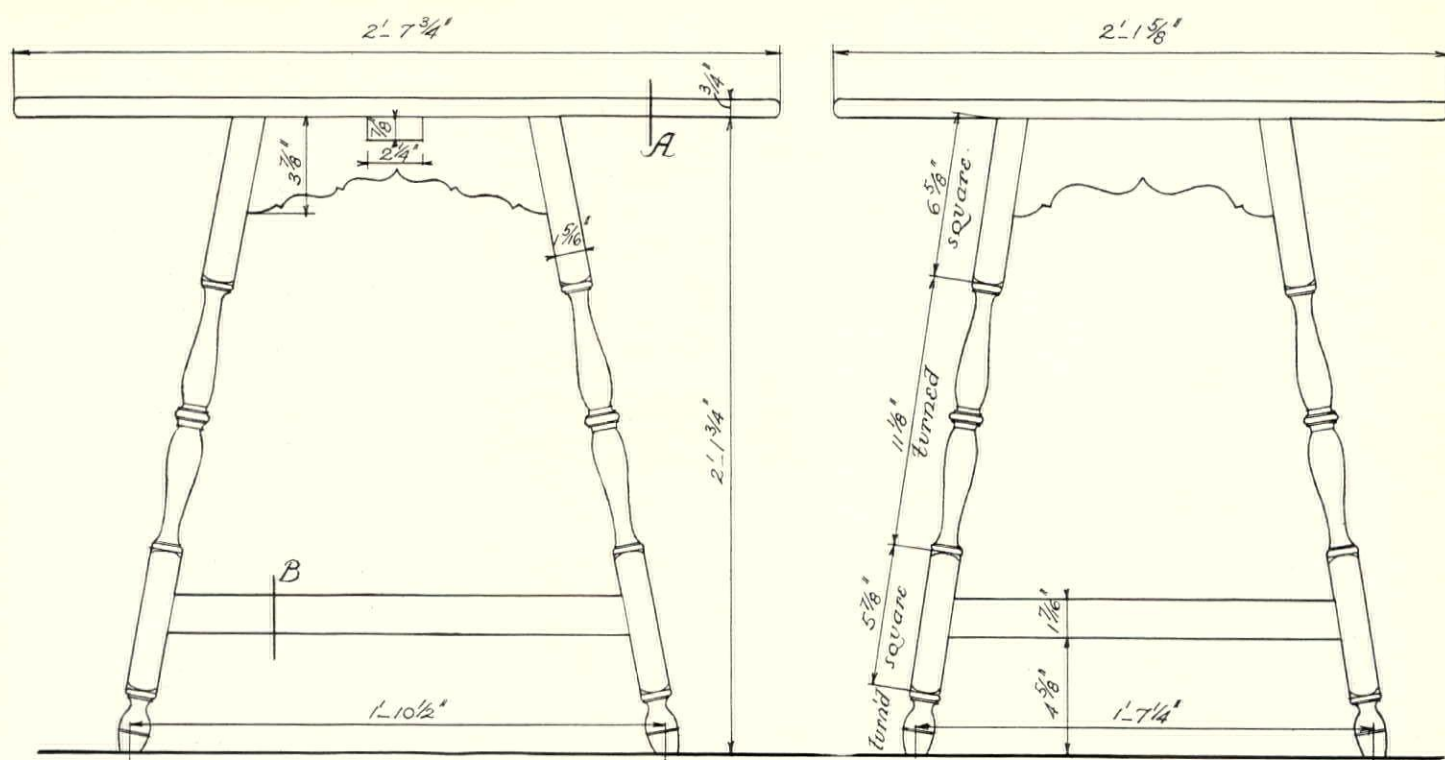


Early American Table Suggesting Italian Feeling

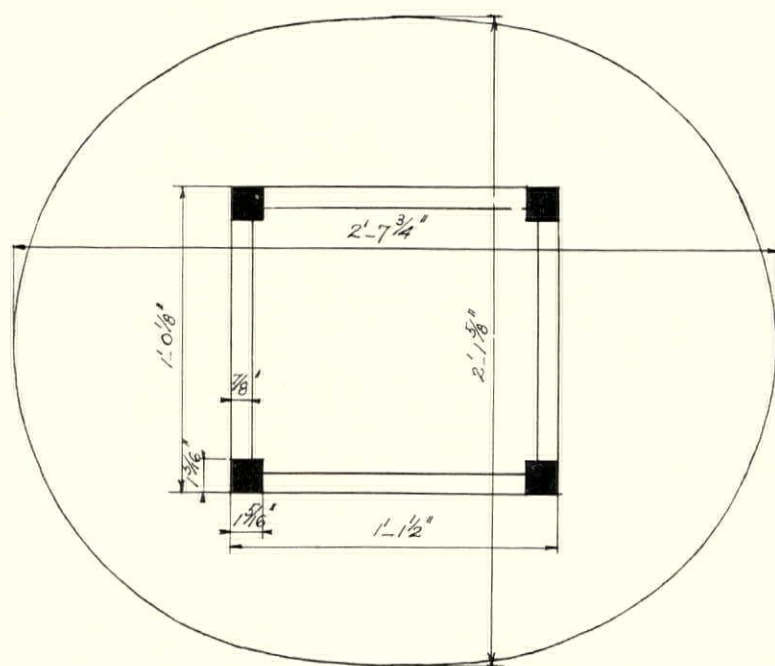


Tavern Table Designed by the Author

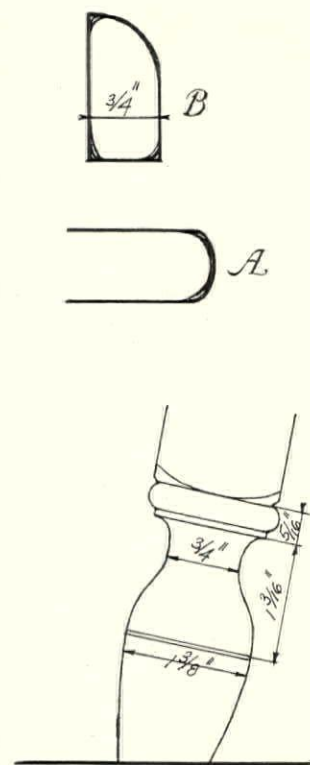




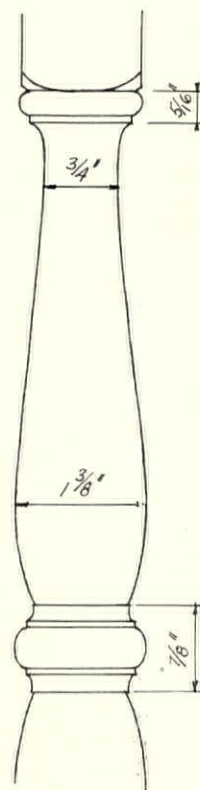
Elevations



Plan of Table Top  
(Looking Up)  
scale 1" = 1'-0"



Detail of  
Foot



Detail of  
Leg

Details drawn to one-half full size

# AMERICAN MAPLE TABLE

1700-1710

from the Metropolitan Museum of Art

NEW YORK CITY



it represents individual skill, a grown man's pleasure and satisfaction in work that has a beginning, a middle and an end. Mechanical production has nothing to do with such altruism. Quantity production is economic war. And although the mass attack will continue to do the world's "fetching and carrying" better than it has ever been done before, let us recognize the fact that the more spirited youth of America looks forward to a finer service than being either infantrymen or officers in the victories of quantity, and then we may have fine artisanship added unto us.

It will be plain enough that these graphic studies are of elementary character in relation to fine architectural detail. But, if it be true that national or racial art thrives only when there is a general consciousness of beauty, these elementary considera-



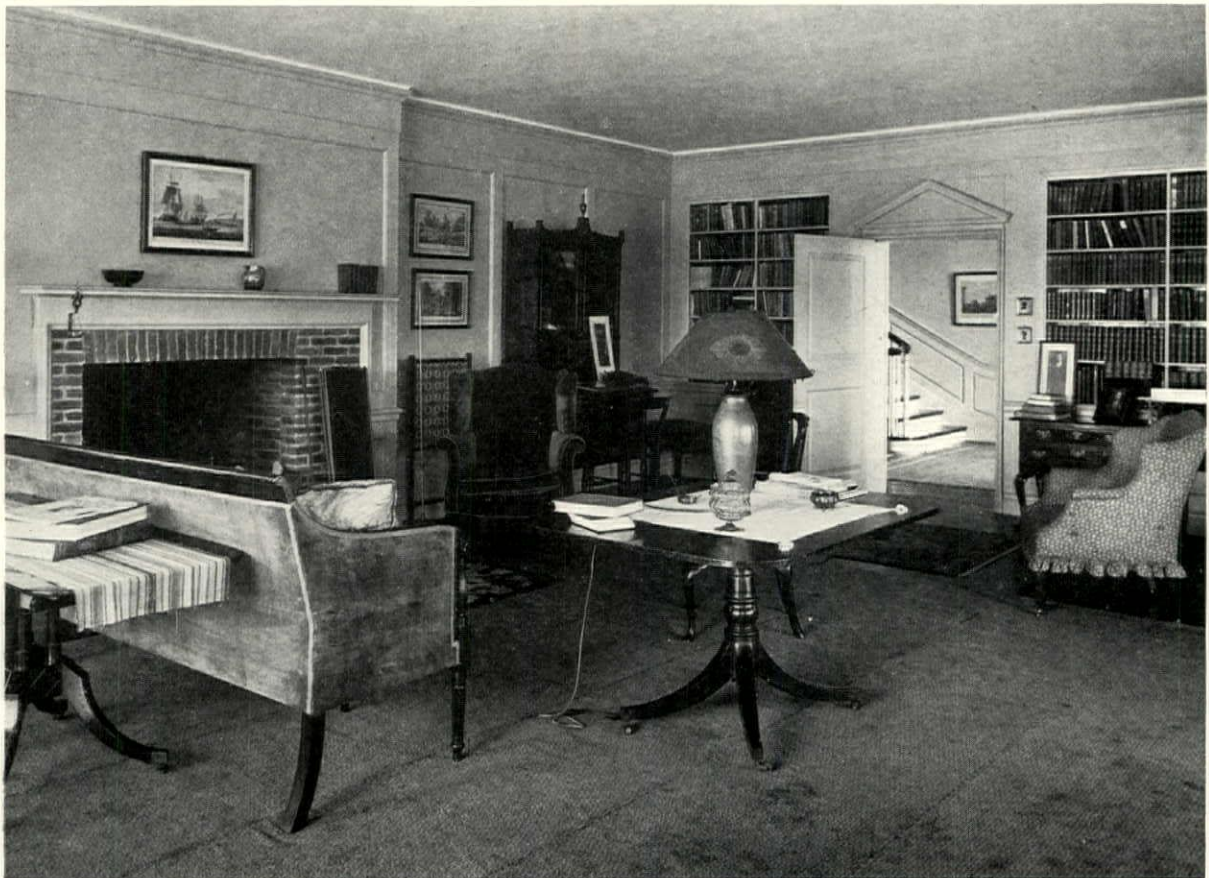
Early Eighteenth Century Tavern Table in Maple  
Measured Drawing from Original in Metropolitan Museum of Art  
on preceding page

to good workmanship its life and interest."

tions are much needed. The basic principles—to observe intelligently, to draw well, to execute skillfully—are little understood today generally. American traditions, of 150 or 200 years ago, can point a way, for it may be seen by the observant that the great mass of current work (in which were once minor fine arts) is as cork and paper flowers to the native wood and native wit seen in museum collections of our early American arts.

"Good workmanship is essential always, but the right motive is what gives

*INTEREST in American architecture has largely been centered in the work extant in the principal towns along the Atlantic coast. There is much, however, to be learned of special value today from study of the simpler examples that may still be hunted out in the lesser known towns, and the thought suggests pleasant summer holidays.—Editor.*



Living Room in Country House at Greenwich, Conn.  
Suggests quaint character of early eighteenth century American rooms  
John Russell Pope, Architect